Engin. Library

SEP 23 1933

PAPER TRADE JOURNAL

Vol. XCVII SEPTEMBER 21, 1933 No. 12

ZELLSTOFFFABRIK WALDHOF

BERLIN, GERMANY

MANUFACTURERS OF

BLEACHED AND UNBLEACHED SULPHITES OF EVERY DESCRIPTION

OUTSTANDING QUALITIES — EXCEPTIONAL VALUES

MILLS AT

MANNHEIM-WALDHOF, TILSIT AND RAGNIT, GERMANY

O/Y WALDHOF A/B

KEXHOLM, FINLAND

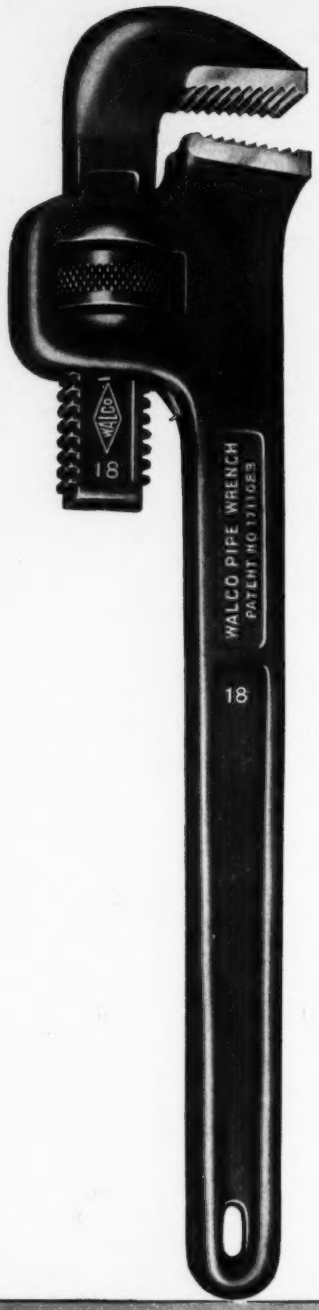
Sole Agents for U. S. A.

Castle & Overton, Inc.

200 FIFTH AVENUE, NEW YORK

Safety

Even a bruised finger should be guarded against—and a broken pipe wrench may mean broken bones.



Walco Pipe Wrench

guards against accidents and should be part of your Safety Program because

It's Stronger

—in fact, the strongest pipe wrench made. All forged steel, heat treated. Housing forged integral with bar. Just four parts.

a WALWORTH product

backed by 91 years continuous service to industry in the production of valves, fittings and tools.

WALWORTH COMPANY, 60 EAST 42nd STREET, NEW YORK

Distributors in principal cities throughout the world

Entered as second-class matter, March 3, 1925, at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Stroudsburg, Pa. Executive and Editorial Offices: 15 W. 47th St., New York, N. Y.

COLOR PROBLEMS SOLVED

efficiently—accurately—economically

●

TECHNICALLY trained representatives

at your disposal.

Current dyestuffs stocked

at all branches

GDC

GENERAL DYESTUFF CORPORATION

230 FIFTH AVENUE
NEW YORK, N. Y.

Boston, Mass.
Providence, R. I.
Philadelphia, Pa.
Charlotte, N. C.
Chicago, Ill.
San Francisco, Cal.

PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-SECOND YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President. J. BANNINGA, Sec.-Treas.

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

TABLE OF CONTENTS

Hearing on General Paper Code	15
D. C. Everest Sees Benefit in NRA Code	16
Thilmany Flies Blue Eagle	16
Dells Asks Tax Relief	16
Chicago Market Drifting Quietly	17
Work of the Paper Foundation	17
Crocker, Burbank Dam Completed	17
Milton Paper Co., in NRA Parade	17
Fine Paper Mills Active in Ontario	18
Improvements at Rhinelander	18
Park Tissue Mills Open Office	18
Philadelphia Market Active	19
Buffalo Waste Dealers Organized	26
Boston Paper Trade Happenings	26
Cascade Mill to Resume	26
Obituary	27
Bids for Government Paper	27
International Paper & Power Report	27
Superintendents Organize on Coast	28
Extending Cellophane Plant	28
Boston Paper Market Spotty	28
Bestolife	28
Editorial	**30**
Signs of Revival in Canada	31
Plant Efficiency New Vital Factor	31
Technical Section	
Pulp and Paper Industry Literature Review	33
The Opacifying of Paper by Means of Titanium Pigments	35
The Commercial Evaluation of Pulp Cord-Wood	38
Statistical Reports of Industries	40
R. E. Wilson to Address TAPPI	40
TAPPI Notes	40
New England TAPPI Meets at Holyoke	41
Farrel Gearflex Couplings	42
Japanese Paper Production	42
Construction News	43
Imports of Paper and Paper Stock	44
New York Market Review	**46**
Miscellaneous Markets	**48**
Market Quotations	**50**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 52, 53

Ross-Briner Economizer (for the full utilization of heat units in waste vapor)

Ross Vapor Absorption Systems

Ross-Grewin High Pressure Systems

Ross Machine Room Ventilation

Ross Systems for Finishing, Beaters, Storage and Locker Rooms

Ross Wagner Recovery System (for soda and sulphate mills)

Ross Drying & Conditioning Systems

Ross Machine Hoods (Transite Asbestos)

Ross-Hooper Smelter Bodies

"Delthirna" Sizing System

Whether for new equipment or for modernizing your present equipment, our engineering staff will gladly make recommendations and aid you to determine your particular requirements.

J. O. ROSS ENGINEERING CORPORATION

201 No. Wells Street
CHICAGO

Main Office—122 East 42nd Street
NEW YORK

600 North Front Street
PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED
NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCVII, No. 12 Thursday, September 21, 1933

General Paper Code Hearing Is Largely Attended

Nearly 500 Paper Mill Executives Are Present at the Meeting Before Deputy Administrator Pickard of the NRA at Washington on Thursday of Last Week—Amended Code is Sponsored by the American Paper and Pulp Association and Its Members Consisting of Nineteen Divisional Organizations

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 20, 1933.—Nearly 500 paper mill executives were present here on September 14 at the hearing on the paper and pulp code held before Deputy Administrator W. W. Pickard of the NRA in the caucus room of the new office building of the House of Representatives. The paperboard code hearing was held the following day.

This is the largest delegation of the paper industry which has attended any kind of conference or meeting in the National Capitol for the past quarter of a century and is said by association executives present to have been one of the largest gatherings ever held of the industry.

One of the high lights of the hearing was the refraining from objections to the code by the paperboard section of the industry, which had been anticipated right up to the last minute before the hearing. The matter was adjusted in conference prior to the hearing.

While there were many good statements read by the chairmen of the various sections of the code, the general statement made by S. L. Willson, president of the American Paper & Pulp Association, at the beginning of the conference and the statement made by A. R. Graustein of the International Paper Company, and chairman of the committee in charge of article seven of the code, on accounting and selling, were perhaps outstanding.

President Willson's Statement

President Willson in his opening statement said:

I desire to offer, on behalf of the American Paper and Pulp Association, an amended General Code of Fair Competition pursuant to the provisions of the National Industrial Recovery Act, with the request that it be substituted for the one previously filed. This amended Code contains no radical changes and is presented with the hope that it may be accepted for the purpose of this hearing.

This Code is sponsored by the American Paper and Pulp Association and by its members, consisting of nineteen (19) divisional organizations covering many different products of the industry but excluding two (2) large groups of primary manufacturers, viz., the Association of Newsprint Paper Manufacturers of the United States and the National Paperboard Association, both of which have submitted separate codes. However, this Code is designed to cover all products in the industry and all manufacturers thereof. It also provides for the creation of an administrative body known as the Paper Industry Authority to cooperate with the Executive Authorities created under the subordinate codes.

The Paper and Pulp Industry

The paper and pulp industry ranks high among American industries. Over one and one-half billion dollars are invested in facilities for the manufacture of paper and pulp. The normal value of the products approximately equals the investment. Over 125,000 wage-earners are normally employed in the industry, of whom ten (10%) per cent are female workers. With the exception of chemical pulp and standard news print paper, the domestic industry to a very large degree supplies the requirements of the United States which in the aggregate amount to sixty (60%) per cent of the total world paper consumption.

The industry is composed of very small and very large producing units, both of which may be and often are in active competition with each other. It is at the same time a mass production industry and a diversified industry. Its various products run into thousands of kinds and varieties. Mills composing the industry are located in all but ten (10) states of the Union, and in Alaska and Hawaiian Islands.

The paper industry consumes approximately 2,250,000 tons of sulphur, clay, limestone and chemicals per year. It requires 3,000,000 horse-power to operate its machinery and equipment and the equivalent of 16,000,000 tons of coal for the generation of steam for both power and drying purposes. The industry consumes normally seven million cords of pulpwood per year, nearly four million tons of waste paper and over a million and one-half tons of straw, rags and other fibrous materials. In addition to domestically produced material, approximately one million cords of pulpwood and nearly two million tons of wood pulp are imported annually for use in the industry.

A large number of finishing or converting industries employing as many wage-earners as are directly engaged

(Continued on page 20)

D. C. Everest Expresses Confidence in NRA Code

Looks for Ultimate Benefits for Paper Industry and Increased Business Activity Throughout Country—States Paper, Board and Allied Industries Will Show Immediate Pick Up—Predicts Eventual Production Control and Price Agreements

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, WIS., September 18, 1933.—Confidence in the ultimate benefits of the NRA code for the paper industry and in a continued upturn in business were expressed in a statement issued last week by D. C. Everest, vice president and general manager of the Marathon Paper Mills Company, Rothschild, Wis., and former president of the American Pulp and Paper Association. He assisted in drafting the code and appeared at the Washington hearings with reference to definitions, organization, and divisional codes.

The paper and pulp industry, said Mr. Everest, maintained a better rate of employment in Wisconsin during the depression than any other industry. The industry has been on the upward trend for several months and the immediate future is bright.

"The code as proposed will mean much to Wisconsin," he declared. "It will require the employment of several thousands of people. Many of the mills have already adopted the new schedules of hours and rates of pay. In most of the plants which previously operated on three shifts of eight hours each, the operating schedules have been changed to four shifts of six hours each.

"In our Rothschild plant, the four six-hour shift plan was put into operation September 1 and 100 employees were added to the payroll. Nearly 40 were re-employed during August.

"In Wisconsin we have no child labor problem to overcome and the readjustment of hours for women is not a serious one. We should show quicker results from re-employment and additional employment than almost any other state. With the increased business activity throughout the country, the paper, paper board and allied products industries will show immediate and continued pick up in their volume of business."

"It Has Got To Work"

In answering the query "Will the NRA work out?" Mr. Everest said "it has got to work."

"During the discussion of the plan from May to now, no one has made a suggestion of a sensible substitute plan. No one has had a better 'bag of tricks' to suggest. The plan is not unlike what many forward looking business men have suggested before, but due to political opposition were unable to put over. The president is to be commended for having the courage to force the necessary legislation. There is no question about its eventually working out.

"Many complications will arise and all will be worked out through the application of common sense. A number of such things have already been disposed of. You can't expect a nation to change its methods of doing business over night, but this country will come nearer to doing it than any other country.

"Many people throughout the country are making much noise over the possibility of production control and price-fixing by agreement or otherwise, but it must be apparent to thinking people that these phases of the situation are the basis of success of the whole plan and will come eventually as the plan progresses. It must be done on a common sense basis, but it will be done.

"This is no time to quibble over details or drag one's heels. Prompt action is necessary and in the paper industry, at least, such action is being taken. People now realize what a hole we have been in and that we must have complete co-operation in order to restore employment."

Among other Wisconsin mill representatives appearing in Washington during the code hearings were George J. Kronschnabel and Charles E. Sage, of the Kimberly-Clark Corporation. Mr. Kronschnabel asked for a six-hour day and a 30-hour week, with a minimum wage of 50 cents per hour for both men and women in the northern zones. Mr. Sage represented the cellulose wadding manufacturers.

Thilmany Flies Blue Eagle

Thilmany Pulp and Paper Company, Kaukauna, Wis., is flying the Blue Eagle flag over its plant, after placing its new schedule of hours and wages in effect. The machines are all being placed on a six-hour shift basis, six days a week, giving workers 36 hours on a basis of pay which will provide the same remuneration as before on the eight-hour day plan. The cost to the company will be equal to about a 33 per cent increase in payrolls. Officials of the company believe wage scales will rise above the present level if the NRA program is successful, and anticipate increased prices to help accomplish this result.

Paper Mill Superintendents Meet

Sessions of the fall meeting of the Northwest Division of the American Paper and Pulp Mill Superintendents Association, embracing largely Wisconsin, Michigan, Minnesota and Illinois, opened Friday morning of last week at Rhinelander, Wis., with about 200 attending. G. H. Suhs, chief engineer of the Rhinelander Paper Company, was general chairman. Frank Timmerman, of the Northern Paper Mills, Green Bay, Wis., is chairman of the division, and presided at the sessions.

Among the speakers scheduled were Herbert Randall, of the Champion Coated Paper Company, Hamilton, Ohio, national president, and Congressman Gerald Boileau, of Wausau, Wis. The speaker at the concluding banquet on Saturday evening was to be L. C. Streeter, western sales manager of the DuPont Company, Chicago. Ernest Draheim, of the Daniels Manufacturing Company, Rhinelander, was to act as toastmaster.

A number of papers on technical subjects were scheduled. Entertainment consisted of stag dinners, golf, sightseeing, and trips to paper mills. Wildwood Lodge, one of the noted resorts of the Wisconsin north woods region, was taken over as a center of recreation, and the scene of the banquet.

Dells Asks Tax Relief

Because of heavy operating losses over a period of years, the Dells Paper and Pulp Company, Eau Claire, Wis., has filed a formal request with the city of Eau Claire to reduce the assessment on its property for 1933. Officials and attorneys of the company appeared before the board of review last week setting forth the facts and intimating a possible shutdown if tax relief were not forthcoming. The taxes assessed this year will be approximately $13,000.

Chicago Paper Market Drifting Quietly

Various Standard Grades of Fine Paper Moving in Fairly Good Volume—Sulphite Bond Papers Exhibiting Stronger Undertone—Kraft Wrapping Paper Dull Although Quotations Continue Firm—News Print and Ground Wood Papers Little Changed

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 16, 1933—The Chicago paper market drifted along rather quietly this week. Conversation was ripe relative to the paper industries code and to its effect on markets in general. Some changes are confidently expected in certain grades this week end. Included in these grades of paper is sulphite bond where there are reports indicating that representatives here are looking for changes. Fine papers in general had a fairly good week, improved over last week, but slowed down over the fast pace of last month. Kraft prices remained firm but incoming orders were not so good. News print and ground wood markets offered absolutely no change over last week with the fair competition situation in Washington the basis for much speculation. Board markets continued firm.

Work of the Paper Foundation

W. J. Miskella, consulting engineer, who had a great deal to do with the construction of the House of Paper and other features of the Paper Foundation exhibit at A Century of Progress Exposition, is handling the affairs of the Foundation while Phil Howard, managing director, is away on a two weeks trip. Mr. Miskella has been closely in touch with the affairs of the Foundation almost since the first and will be in a splendid position to carry on the work during a particularly important time. He will make the arrangements and assist in the coordination of the program built around the National Paper Trade Association meetings in Chicago, October 3 to 6. At that time special events will be featured at the Paper Exhibit and held in conjunction with the National Paper Trade Association program.

Direct Mail Convention Plans

Plans are completed for the annual convention of the Direct Mail Advertisers Association, which takes place from September 27 to 29 in the Hotel Sherman, Chicago. Thirty-seven speakers have been selected for the extensive program including Charles F. Kettering, vice president of General Motors; F. U. Webster, advertising manager, Cutler-Hammer, Inc.; H. N. Batten, vice president, N. W. Ayer & Son, and J. L. Frazier, editor of *Inland Printer*, who will talk on "Increasing Returns by Stepping up Paper Quality." The Mail Advertising Service Association will hold its annual convention on the two days preceding the Direct Mail Advertising Association meetings. Included in the list of five directors nominated for election at the annual session is Eliot L. Wright, United States Envelope Company, representing envelope suppliers. Paper interests in Chicago, through the Paper Foundation, will cooperate with the Direct Mail Advertising Association in drawing attention to the Paper Exhibit at A Century of Progress Exposition.

Salesmen Complete Golf Schedule

The Middle West Division of the Salesmen's Association of the Paper Industry held the final event of its golfing schedule at the Westmoreland Country Club on Friday, September 15. More than fifty golfers responded to the excellent lunch, the afternoon's play and the big dinner event in the evening. It was a fitting finale to some excellent work done by Bill Tilden, golf chairman. The Association now has only one more big event to look to—the guest event at the Olympia Fields Country Club at the time of the National Paper Trade Association sessions in Chicago.

Chicago Paper Association Meets

The Chicago Paper Association held its regular meeting on Tuesday evening, September 12, with William Chukerman, vice president of the retail division, presiding. W. J. Miskella, representative of the Paper Foundation, was a guest at the session and outlined the needs for further cooperation from the association. He suggested that the paper jobbers present contact with manufacturers in an effort to secure additional sponsorship—financial and otherwise—of the lake front exhibit at A Century of Progress. The remainder of the session was given over to a thorough discussion of resale problems. Reports at the meeting indicated a slowing up in orders for coarse papers, although prices remained firm.

Crocker, Burbank Dam Completed

[FROM OUR REGULAR CORRESPONDENT]

FITCHBURG, Mass., September 18, 1933.—To furnish a larger water supply for the big plant of the Crocker, Burbank & Co. Association, needed for some time, a big dam, covering 106 acres of land, is about completed, except for installation of the gates, and will be flooded in about three weeks. When business began to slacken at the plant a year ago last July, the president, Charles T. Crocker, began to cast about for means to keep his men at work. He decided to go to work on the new dam. Since then two shifts of men have been employed three days a week.

The project, known as the Brooks Dam, is located about three-quarters of a mile from the Westminster Station of the South Ashburnham branch of the Boston and Maine Railroad. The reservoir will be filled with water from the Nashua River Dam and the Blue Dam, both in South Ashburnham. All the work has been done by hand labor, the only machinery used being a cement mixer, a tractor and a gasoline air compressor. During the winter when shovel work was impossible, the men were employed in cutting lumber, of which 192,000 feet were produced for use in the dam. In the construction twenty-four cars of cement have been used.

Milton Paper Co. in N R A Parade

The Milton Paper Company of New York proved its sincerity and loyalty to President Roosevelt's NRA by being one of the very first signers of the Blanket Code and to further substantiate that loyalty, was the only organization from the entire paper distributing industry in New York to parade.

With 100 per cent of its entire organization participating, displaying a large banner "Milton Paper Company Does Their Part" followed by the uniformed red caps carrying the Blue Eagle, and led by the American Legion Band, they strode loyally past the reviewing stand. Milton Paper Company is 100% under the NRA.

Fine Paper Mills Fairly Active in Ontario

Prevailing Conditions Generally Better Than Existed Earlier This Season—Demand for Book, Bond and Ledger Papers Moderately Persistent—Coated Paper Plants Continue Quiet—Light Weight Papers Moving in Satisfactory Volume

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 18, 1933—Sales of fine papers by the paper merchants continue on a fairly satisfactory basis, comparatively speaking, although the volume is not large. It is noted, however, that orders are slightly larger than has been the case in months past and now that the holiday season is practically over the trade is looking for some really good business. In some quarters of the wholesale paper trade there is a disposition to stock lightly and the same applies to the paper consumer, although this movement is very slight as yet. Commercial houses are gradually increasing their consumption of paper and while the printing trade as a whole is dull there has been a slight increase in output during the past month or so in the line of direct mail pieces, posters and catalogs. Some of the larger printing and lithographing houses are getting some fairly good business but the small printer is being hit rather hard. Collections in all sections of the printing and paper trade are hampering business generally, and with the highly competitive conditions prevailing the general business revival is retarded.

Mills manufacturing fine papers are fairly active and in some cases are a week ahead of the orders on file, which is a better condition than existed early this season. There is quite a fair demand for books, bonds and ledgers, although the small order variety of business still exists and car load orders are more or less of an unknown quantity. Quite a considerable amount of envelope paper is being used and envelope manufacturers, who have been quiet of late, report some nice orders either in hand or about to be released. The coated paper trade is quiet and mills manufacturing this line of paper are for the most part inactive. On the other hand there has been an excellent call for grease proof, glassine and waxing lines and for the past several weeks plants have been quite busy and running close to capacity. There is quite a good movement in light weight papers such as tissues, toilets, paper napkins, towels and specialties generally and some nice business is reported from firms who made displays of this line of paper at the Canadian National Exhibition.

Board Situation Little Changed

There is little change in the board situation. With two increases in price during the past three months the board mills have found business only slightly stimulated and there does not seem to be any great rush on the part of consumers to buy despite the fact of another possible upward price revision within the next few months. Raw stock, particularly waste paper, has been mounting. In regard to waste paper a good many people are at a loss to account for the jump and some are wondering if it is justified. So far the paper box industry has not raised prices in line with increased prices for raw material but this may come later. In the meantime there has been a slight increase in paper box manufacturing activities, particularly in the plants of big department stores who make their own boxes. They have been buying board freely in preparation for next Christmas business which they are confident will be of good proportions. The Christmas business of the box maker has been backward this year and some of the manufacturers doubted whether or not it would come at all. It has arrived in somewhat curtailed form, however, and it has been keeping a few of the plants fairly busy for the past several weeks. The paper converting trade is still dull although there has been some increase in sales of various grades of envelopes.

Notes and Jottings of the Trade

Ontario Clay Products Syndicate, with J. D. Grant, Toronto, as general manager, has acquired a building in Oshawa, Ont., and will engage in the manufacture of certain appliances used in paper mills, together with clay products.

The Richelieu Paper Box Company, Ltd., has been granted a provincial charter, with a capital stock of $10,000 and headquarters at St. Hyacinthe, Que. The company is authorized to manufacture and deal in all kinds of paper boxes and cartons, together with general paper lines.

A new folder just issued by Provincial Paper, Ltd., Toronto, recommending its Oxford Super is of striking and attractive appearance. It puts the pertinent enquiry "How can the printer be a good printer or a good seller unless he is at the same time a good buyer?" The text emphasizes that paper is the most important purchase that the printer has to make.

In general the forest fire hazard throughout Ontario has been very high throughout the summer with unusual lack of water in the swamps, streams and lakes, making fire extinguishing very difficult, E. J. Zavitz, Deputy Minister of Forest of Ontario, stated. The northwestern portion of the province, west of Lake Nipigon has had severe drought and an unusually large number of fires caused by lightning have occurred during the summer with consequent loss of tracts of pulpwood. Rainfall during recent weeks has made the situation less serious, he said. Throughout the northeastern clay belt the fire hazard was high during July and early August, but enough rain fell during late August to improve conditions considerably. Algoma region did not have any extremely high fire hazard the early part of the summer.

Improvements at Rhinelander

The management of the Rhinelander Paper Company has just placed a contract for a new Babcock & Wilcox boiler rated at 834 hp., to be stoker fired for 400 per cent of rating. This boiler will be built for 425 lbs. per square inch operating steam pressure.

This installation is necessary to take care of the growing need for additional power brought on by new developments that are continually in process at Rhinelander.

A new roof has just been completed over one of the main machine rooms, and construction is already under way for an addition to the mill to take care of storage and machining of supercalender rolls. Expenditures for these improvements run in the neighborhood of $150,000.

Park Tissue Mills Open Office

The Park Tissue Mills, Inc., manufacturers of roll toilet tissue, have opened new sales and executive offices at 303 Fifth Avenue, New York City, on the eighteenth floor. The plant is located at Salisbury Mills, N. Y. The Frost-White Paper Mills, Inc., also maintain offices at the Fifth Avenue address.

Philadelphia Paper Market Moderately Active

Following Adoption and Enforcement of Various Industrial Codes, Expansion of Fine Paper Business is Confidently Anticipated—Some Improvement Noticed in Coarse Paper Section—All Grades of Paper Reported Well Cleaned Up

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 18th, 1933—Mid-September and the two weeks since Labor Day, have not developed the spurt which the sanguine hoped for. Fine paper houses report a rather unsettled condition in the printing trade. Quicker activity among some houses where it was expected and a falling off among others, which has been looked to for increased orders, and launching of long considered direct advertising campaigns was expected immediately after Labor Day, but because of unsettled conditions incident to Code adoption and enforcement, are being withheld. It is believed, however, it will only be a matter of a short time before resultant business will be enjoyed. Coarse paper sales were under some handicap from labor difficulties but almost a majority of these have now been settled and some reflection of the better conditions was in evidence.

The paper stock market continued well cleaned up for all grades. Reports of an easing of prices on mixed papers are apt to be misunderstood unless the true situation is known. The largest local consumer has reduced the price paid to packers by $2 a ton, but this applies only to what in the trade is known as false packings—in other words inferior stock. Because of the urgent demand for commons and the soaring prices, many of the small dealers baled up a variety of material of such poor quality generally that the mills met inferior goods with lower prices. The good grades or even the cheapest commons remain as they were.

The serious development of this week has been the strike of teamsters. This Monday afternoon, one of the largest truckers—a man furnishing service to at least one newspaper and three paper houses, called all his teams off the street, sending his drivers home until the situation should become eased. All the trucks of one of the leading coarse paper houses and of another coarse and fine paper house were also taken from the streets at noon. It is believed that the strike will be of short duration, however, but meanwhile, this afternoon at least, delivery services was very seriously crippled.

Paper and Cordage Outing Postponed

Because of inclement weather, the outing of the Philadelphia Paper and Cordage Association, planned for September 15, has been postponed until the 26th. Instead of the outing a hastily called meeting was held however in the Rose Room of the Adelphia Hotel—twenty-one members being present. The following were elected to membership: Willcox-Walters-Furlong Paper Company, represented by William Willcox; Wheeler Paper Corporation, represented by Martin A. Mutz; J. E. Fricke Company, represented by W. T. Clark; Wilder Brothers, represented by Charles A. Wilder; G. A. Bossler, Hinde & Dauch Paper Company, represented by H. P. Johnson; American Writing Paper Company, represented by F. W. Hastings. An amendment to the Bylaws makes it possible now to secure a full year's membership from the time of election, and not merely from the calendar year. At the business session, George K. Hooper, president, appointed a committee to revise the Bylaws, consisting of Harry S. Platt, chairman; Amos Coath, J. R. Howarth, E. L. Richards, Fred. I. Brower, Leslie L. Bartlett. It is proposed in this revision to meet modern day conditions, since there has been no revision for the last eight years, and to emphasize the two principal objects of the association—the promotion of business among members and the friendly relationship between manufacturers and distributors. Every effort will be made to make the outing on the 26th a red letter event. Active in the arrangements, in addition to Mr. Hooper, are Leslie C. Bartlett, Eastern Paper Company; H. S. Platt, Denney Tag Company; Frederick I. Brower, mill representative and E. L. Richards, BECO Band Envelopes.

Paper Trade Association Expands

True to expectation, the meeting of the Philadelphia Paper Trade Association held recently was the largest in recent months. After thorough discussion, a new constitution and by-laws were unanimously adopted, under which doors of the association are now thrown open to the closely allied paper and bag and cordage dealers, and as a result of this action there was added to the membership rolls of the association some thirty additional names. The Philadelphia Paper Trade Association can now be said to be thoroughly organized and one hundred per cent representative, a condition of affairs most gratifying to the officials who have so long devoted their time to establishing it on a successful basis. Under the new constitution, the largest departure made necessary by the new conditions was the election of a Board of Governors, representing all phases of the industry. The following officers were elected: Fred Balch, Susquehanna Paper Mills; Milton K. Christine, Raymond MacNutt; Norbert A. Consi line, Paper House of Pennsylvania; William A. Hentz, D. L. Ward Company; Edward A. Keller, Garrett-Buchanan Company; Frank O'Neill, Paper Manufacturers of Philadelphia; Charles Resnick, Thos. Resnick & Sons; Butler Smythe, J. L. N. Smythe Company.

Immediately after the election, President Hentz and others on the old executive force went into conference with the new Board of Governors, and new officers for the consolidated association were elected as follows: William A. Hentz, president; Edward A. Keller, first vice president in charge of Fine Paper Division; Butler Smythe, second vice president in charge of Coarse Paper Division; Charles Resnick, third vice president in charge of Bag Division; Milton K. Christine, treasurer; and Fred Balch, secretary.

Paper and Bag Institute Meets

The Paper and Bag Institute of Philadelphia held its meeting in combination with the Paper Trade Association at the Broadwood Hotel. A very interesting talk was given by H. J. Hogg on the value of cooperation. This association will be known in the future as the Paper and Bag Division of the Paper Trade Association of Philadelphia, with Charles Resnick elected vice president in charge of the Paper and Bag Division. Mr. Resnick gave a very illuminating talk, and assured his hearers he would do everything in his power to make this division of the Paper Trade Association a success.

HEARING ON GENERAL PAPER CODE IS LARGELY ATTENDED

(Continued from page 15)

in primary manufacture are dependent upon the industry. These industries in the aggregate sell paper products which in value approximately equal the value of the primary paper manufactured. In addition to these industries, the publishing and printing industries are wholly dependent upon the products of the paper industry.

The American Paper and Pulp Association

The American Paper and Pulp Association, the sponsor of this Code, was organized in 1878; it is the oldest national central association in the United States. To facilitate the administration of cooperative activities in the industry, the Association has been reorganized. It is now a federated organization of which nineteen (19) groups are recognized, which represent every product manufactured in the industry. Each of these groups is represented upon the central organization's Board of Governors. Membership in the American Paper and Pulp Association is vested only in the divisional organizations, but membership in the divisional organizations is open to any domestic manufacturer whose products fall within their respective jurisdictions.

The Board of Governors is authorized by the Constitution and By-Laws to elect a President and an Executive Committee of not less than six (6) nor more than ten (10) members, any of whom may be chosen from the Board of Governors or from the industry at large. At this time I submit a copy of the Constitution and By-Laws.

Representation in the Association

Of the 619 companies and subsidiaries manufacturing paper and pulp in the United States, 351 are members of the Association through membership in one or more of the divisional organizations. Of the non-member companies 180 are manufactureres of news print or of paper board whose products fall within the jurisdiction of their separately presented codes. The remaining 85 companies represent chiefly small companies which have not yet affiliated with member division to which they are eligible. The member companies represent a daily production capacity of 29,316 tons and the non-members not now subject to the jurisdiction of the Code represent 6 per cent or 1840 tons of daily capacity.

In passing, I wish to state that all of the 180 mills making news print and boards are eligible to membership in the American Paper and Pulp Association, and could and perhaps should be covered by this Code.

The General Code

The Code now presented contains provisions to effectuate the purposes of the National Recovery Act. Its provisions for maximum hours of labor and minimum rates of pay are designed to increase employment and to augment purchasing power. Its provisions for accounting and selling and for the elimination of unfair trade practices and the establishment of uniform practices and customs are designed to improve the competitive conditions within the industry and to lift it from the quagmire of an aggravated depression which because of price cutting, secret discounts and rebates, dumping in distant markets and other similar destructive practices, it has experienced to a greater extent than most other large industries.

A Community

In considering the hours of labor and wage rates, it is well to bear in mind that the paper and pulp industry is essentially rural in character. Ninety-one (91%) per cent of the paper and pulp mills in the United States are located in cities of under 100,000 inhabitants and sixty-one (61%) per cent are located in cities of less than 10,000 population. In fact, thirty-five (35%) per cent of the total are situated in towns of less than 2,500 inhabitants in most of which the paper mill is the chief source of income.

Stability of the Industry

Another important fact bearing upon the hours of labor and wages is the remarkable stability of the industry. Although fluctations in demand are relatively great during short periods of time, the annual consumption of paper in the United States maintains a level just below that of such essential products as food and shoes. The industry produced in 1932, for instance, 7,997,872 tons of paper which represents a reduction of but twenty-eight (28%) per cent from the peak production of 1929, in contrast with the general reduction in all industry of approximately (50%) per cent.

Financial Condition of the Industry

A third fact which bears not only upon working conditions but also upon the competitive welfare of the industry, is the abnormally high ratio of fixed investment to annual value of the products. In 1929 the industry produced products whose value in the aggregate approximately equalled the investment in manufacturing facilities, exclusive of material resources. In 1931 the total value of production as recorded by the Bureau of the Census was but slightly more than one-half the investment. The ratio in 1932 was even more unfavorable.

The costs in fixed overhead within the industry, even under normal conditions, are extraordinarily high. The paper industry, as distinct from the pulp industry, is now equipped to produce twenty-three (23%) per cent more paper than was produced in 1929, by reason of greater efficiency in operation and added equipment.

The overhead burden of excess producing capacity and the tremendous investments in this equipment, even though some of it is relatively inefficient as compared with the equipment in modern mills, are powerful incentives to overproduce. As the volume of production wanes, the overhead burden increases. This condition, combined with the fact that a large percentage of the mills in the industry are the only means of support in their respective communities, has been chiefly responsible for the destructive type of competition that has brought the industry to the verge of bankruptcy during the past four years.

Employment, Wages and Payrolls

The facts cited above have been reflected in the employment and wages paid by the industry. In spite of the conditions, however, the industry has continued to employ throughout the depression within sixteen (16%) per cent of the numbers employed in 1929, the peak year, and the wage rate reductions averaged for all occupations in production have not exceeded eighteen (18%) per cent. Because the results of short hours of operation have been added to those of wage reductions and lay-offs, payrolls have decreased much more and average weekly earnings. which amounted to $26.53 per wage-earners in 1929 shrunk to $18.24 in May 1933.

The provisions of the General Code, which limit work-

ing hours to maxima of eight (8) hours per day and forty (40) hours per week, will, upon the same production basis as of 1929, increase employment in paper manufacture by 22.95 per cent over that actually existing in May 1933. Of this percentage, 13.55 per cent would be attributable to increased production operations to equal the operating level of 1929, and 9.4 per cent would be due directly to the employment of more men because of shorter hours. These increases are over and above the technological decreases that have taken place since 1929, which it is computed amount to 6.63 per cent of the total numbers employed. These losses in employment are permanent except as they may be offset by shortening the hours of labor.

Figures compiled currently for the last nineteen (19) years by the National Industrial Conference Board show that continuously throughout its records the hourly rates of all employees in the paper industry, unskilled and semi-skilled and skilled, have been uniformly from five (5%) per cent to ten (10%) per cent below comparable averages in twenty-four (24) major industries. The average of female rates is from ten (10%) per cent to fifteeen (15%) per cent below the averages of other industries. From the same source it is shown, in contrast, that the average weekly earnings of employees in the paper industry, with the exception of female workers, have been uniformly above the comparable averages in the twenty-four (24) industries. Female labor which is relatively few in number in the paper industry and is confined to light and simple work, is below the all-industry average in weekly earnings.

The facts that the industry is so largely rural as to location and that it is so much more stable in operating time than most other industries, explain these differences. This same relationship of working hours and hourly rates between the paper industry and other industries should be maintained and this is provided for in the forty (40) hour weekly maximum working hours and in the minimum rates of pay fixed in the Code.

Employment and Wage Increases Under the Code

The working hour provisions of the Code will increase the number employed to 135,000 wage-earners on the basis of current operation from 107,000 in May 1933, an increase of over 6,000 more wage-earners than were ever before employed in the industry at one time. On the basis of May 1929 production this increase would be doubled.

Although the provisions for minimum wages apply only to unskilled workers, which according to the National Industrial Conference Board form thirty-four (34%) per cent of the total direct labor in the industry, evidence from those mills that have already adjusted wage rates to conform with the rates herein provided and set forth in the President's Reemployment Agreement for the industry, indicate that the adjustments above the minimum will carry payrolls to approximately the 1929 level; and that the average weekly earnings of employees in the industry will be raised from $18.75 per week to at least $24.25 per week; and that the total payrolls in the industry on the basis of current operations will be increased from the rate of $100,000,000 per year in May 1933 to approximately the 1929 level of over $170,000,000, an increase of $70,000,000 in purchasing power at a corresponding increase in costs to the industry.

In these figures it must be borne in mind that we are dealing with broad averages for the industry as a whole and that it might be possible to single out individual cases where, because of short hours of operation or because wage rates were not reduced from the 1929 levels, the increases herein claimed might not be substantiated. It must be borne in mind, however, that these statements are necessarily estimates, based upon careful analysis as will be demonstrated later.

Elimination of Destructive Competition

The elimination of destructive competition is essential if this industry is to contribute its share in the rehabilitation of employment and purchasing power of the nation and in the support of the national governmental and social institutions.

The financial condition of the industry is not good. A survey of companies whose reports are listed in Moody's Manual shows that the net working capital has been materially reduced; an analysis of thirty-three (33) companies whose capacity exceeds one-quarter of the total for the industry, shows a reduction in net working capital of 19.8 per cent in 1932 as compared with 1931.

This industry as well as other industries is unable to secure its normal lines of credit, and the necessity of paying cash for materials which cannot be readily converted into salable products, has substantially reduced the funds available for current operation. The prices of raw materials have increased sharply and the stocks on hand are abnormally low. Only the relatively few well financed companies, either large or small, are in a position to absorb the increased cost of labor under the provisions of the Code without having immediate relief in higher prices for paper.

Prices of paper moved gradually downward from 1929 to the middle of 1932 when very sharp further declines took place. Except in the case of specialties and diversified manufacture, profits ceased and losses developed. An analysis of twenty-three (23) companies whose reports are given in Moody's Manual in sufficient detail, shows an aggregate loss in 1932 of $13,439,952 as compared with an aggregate profit of $4,905,259 in 1931. The only companies that earned any interest whatsoever upon their investments were those that manufactured specialties. The losses of the companies analyzed vary up to a maximum of 24.46 per cent. Such losses as these are accountable for the distressing reduction in net working capital pointed out heretofore.

To facilitate the rehabilitation of the industry to a point where it may pay its proper dividends to the thousands dependent upon such income for livelihood and to protect the level of wages herein provided, the Code contains provisions for open price records and restraining provisions against selling below cost. It provides for the necessary protection of its competition from the relative few who, with or without reason, have in the past initiated unfair price cutting.

Code, A First Step

The Code does not provide specific means of regulating production to demand or of the control of excess production facilities. It does, however, provide for the collection of statistics and the making of studies whereby methods of regulating production may be determined and recommended to the Administrator for approval, with the same force and effect as the initial provisions of this Code. The formulation of such measures in the interest of industry and in the public interest, constitutes an important second step in the regulation procedure of which the submission of this Code is the first step.

With the view of furnishing promptly any facts that may be called for at this hearing, five Committees have been appointed, each of which has prepared facts and statistics

that relate to the Articles of the Code assigned to them and which they will present at your pleasure.

Steps To Harmonize Paper Board Code

As the morning hearing progressed, steps were taken to harmonize the terms of the paper board code with those of the paper and pulp association, thus eliminating conflict between the two groups. Developments also revealed representatives of both industry and labor attacking the wages and hours provisions of the code, with labor also supporting the desire of some manufacturers to restrict machine production hours to 144 a week.

A statement was added to the record by W. B. Turner, representing the National Paperboard Association, stating "The producers of paperboard offering this code have refrained from objecting to the enumeration of products and the provisions contained in the revised code submitted by the American Paper and Pulp Association."

However, the statement carried with it a provision that this code should not be binding upon the producers of the following products:

Binders board, and all other wet machine board; bristol board; cardboard and mill blanks; coated or surface treated subsequent to initial manufacture; light weight chip board, bogus wrapping, sheathing paper, and indented, ham wrapping; sulphate boards and sulphate corrugating materials; specialty folding and specialty non-folding boards, including all boards made from prime or fresh wood pulp, jute stock and rope stock.

Geo. H. Mead Defends Wages and Hours

George H. Mead, chairman of the Mead Corporation, Dayton, O., in defending the wages and hours provisions of the proposed code, declared that he believed the three zone pay rates would almost restore the 1929 purchasing power of the worker. Questioned by Deputy Pickard concerning the three zones, Mr. Mead said that this number was chosen as it had been found impossible to divide the country in half. It was attempted to create a minimum number of zones and yet distribute the industry thoroughly. He thought that "three zones were better than the 19 zones in the steel code." In reply to another question from Deputy Pickard, Mr. Mead was unable to say whether the production costs in the Southern zone were higher than in the Central or Northern zone. The zones under discussion were defined as follows:

Northern Zone: which consists of all the territory of the United States except those states named in the Central and Southern zones;

Central Zone: which consists of the states of Delaware, Maryland, Virginia, West Virginia, Kentucky, Tennessee, North Carolina and the District of Columbia;

Southern Zone: consisting of the states of South Carolina, Georgia, Florida, Alabana, Mississippi, Louisiana, Arkansas and Texas.

G. J. Anschnable, of Neenah, Wis., representing the employes of the Kimberly-Clark Corporation, called for a six hour day and 36 hour week for all employes except those above the status of foremen, with a minimum hourly wage for all hourly labor of 50 cents an hour for the Northern zones; 47½ an hour for the central zones; and 45 cents an hour for the southern zones. He explained that most of the Kimberly-Clark mills were now operating on these schedules, while the increase from the three to the four six-hour shifts had added about 350 or 400 employes to the normal 2,500 workers in the mill. He stated that the new hiring rate was set 39 cents an hour while before it had been about 35 cents an hour.

Matthew Burns Speaks

Matthew Burns, president of the International Brotherhood of Papermakers, and Labor Advisor to Deputy Pickard, pointing out that "the rights of both capital and labor are involved in this code," asked that paper mill machines not exceed 144 hours per week and that the prevailing practice of Sunday operation be abolished.

No complaint was found, he said, with the 40 hour week at this time, despite the fact that a large number of manufacturers are already on the 36-hour week. He said that since there is a tendency in the industry to accept a 36-hour week, he would accept the code's hours provisions, expecting that within 90 days most of the paper mills would be on a six-hour day rather than a 40-hour week. He differed with the code committee in regard to minimum rates of pay, calling for the following scale: Northern zone, 42 cents an hour for male, and 38 cents an hour for female labor; Central zone, 40 cents an hour for male, and 36 cents an hour for female labor; Southern zone, 38 cents an hour for male, and 34 cents an hour for female labor. These are substantially the same rates as were asked for in the newsprint code. Mr. Burns also offered an amendment calling for time and a half for overtime work on holidays and double time for Sunday operation.

Suggests Limitations on Machine Operation

Arthur Huggins, secretary of the International Brotherhood of Papermakers, also suggested an amendment calling for limitation on machine operation to 120 hours in any one week, and never more than 144 hours a week. He also asked that machines not be operated during the Sunday shut-down. Every member of the industry should report the number of machine production hours to the code committee, he added. He pointed out that the code now permits an operating time of 168 hours per week for machines.

John C. Burke Supports Mr. Burns

John C. Burke, representing the Brotherhood of Sulphite Paper and Pulpmill Workers, generally supported Mr. Burns' amendments to the code. He stressed the fact, however, that the minimum wages offered were too low as set forth in the code. He pointed out that Sunday work was an evil which must be abolished in the industry, stating that the 1910 strike of the International Papermills was caused by this condition. He said that while Sunday work had been almost eliminated during the past 29 years the present conditions had brought about its resumption, but he saw no economic necessity for it and "it shocked the moral sensibilities of the communities" wherein it takes place.

Those assisting Deputy Pickard at the hearing were the following: Labor Advisors Major George L. Barry, Solomon Barkin, Matthew Burns and John Burke; Consumer Advisor Emil Kekich; Industrial Advisor C. R. McMillen.

Kraft Division To Attempt Readjustment

Norman S. Stone, of the Mossinee Paper Mills, of Mossinee, Wis., speaking for 12 mills, said that the northern and southern branches of the Kraft paper manufacturing division would attempt to reach an adjustment of the problem of machine limitation to 144 hours per week among themselves, thereby obviating discussion of the problem in open hearing.

Also Edward J. Legasse, of Berlin, N. F., speaking for the employes of the Brown Company, and representing the Coos County Workers Club, asked for a minimum wage of 50 cents an hour and a maximum work week of

40 hours, with a guaranteed weekly minimum wage of $20 and no differentials of any kind.

Also supporting the suggestion of Mr. Legasse was Arthur Bergeron, of the Coos County Workers Club, who said this guaranteed weekly minimum wage was "absolutely" necessary in view of the rising cost of living all over the country, and particularly in Berlin. He quoted statistics to show the increased cost of food products in Berlin. He also quoted from a monthly economic letter of a prominent New York bank showing the recent slowing down of business, due, as he said, "to the lack of purchasing power of the workers."

Support of the Small Mills

Support of the small mills was given by R. W. Spencer, of Newburgh, N. Y., representing 14 small mills, who asked that the code assure the small mills of a restriction on production. He said that the smaller mills employed more persons per ton of output and consequently they have suffered most during the depression. Approximately ten per cent of the mills in the industry are idle today. He quoted General Johnson's statement that the "little fellow would be protected."

Mr. Graustein Explains Price Clauses

Mr. Graustein in his statement explaining the price clauses said:

SECTION 1. UNIFORM ACCOUNTING

The first section of Article VII provides that the Paper Industry Authority, on which the government will have three representatives, shall prepare a standard method of accounting and costing for the industry.

The preparation of standard systems of accounting is a customary activity on the part of trade associations and for many years past has been encouraged by the Federal Trade Commission and by the Department of Commerce. The public advantages of such systems are so generally understood that we assume that it is not necessary to present the facts bearing on this clause.

Provisions generally similar to Section 1, are contained in the following codes—

Electrical Industry, section 8
Lumber Industry, Article IX, paragraph A.

SECTIONS 2, 3, 4, 5, AND 6—PRICES AND PRICE LISTS

(a) *Conditions In The Industry.*

The paper industry is one in which the capital investment per ton of output is very heavy. In some branches the investment in fixed assets is as high as $4 for $1 output a year. The average under present conditions is $2.22 for every $1.00 of output. This average investment per unit of output is higher even than that of the Steel Industry, which is regarded as a conspicuous example of an industry having large fixed assets with slow turnover.

A large proportion of the cost of manufacturing paper is made up of fixed expenses which must go on regardless of the rate of operation. This cost per ton of output varies directly with the number of tons produced. As this proportion of the cost is large, the variation in cost per ton is likewise large. A fixed expense of $15 a ton at full operation becomes $30 a ton at 50% operation and $60 a ton at 25% operation. The inevitable result, during a period of declining consumption, is a tendency on the part of the manufacturer to secure volume at any price which will cover his direct expenses for labor and materials, regardless of taxes, interest, insurance, fixed power charges and other fixed charges and even of proper maintenance. This tendency creates a vicious spiral. A price cut made by a few manufacturers becomes a new and lower general level from which the process of price cutting starts anew. The effect is to reduce and ultimately, step by step, eliminate, that part of the price which covers fixed charges and profits. This phenomenon is not peculiar to the paper industry. But since its seriousness and destructive capacity are proportionate to the amount of fixed charges involved in manufacturing cost, it is obvious that it is unusually destructive in the case of the paper industry.

Another factor which has led to the reduction of prices regardless of cost is the necessity for securing cash to meet pressing obligations both by solvent companies and by reecivers. Often the only means of securing cash is liquidation of inventories and as inventories are large, sometimes consisting of as much as two years' supply, the injury to the market is serious.

The following paragraph from a report by the Receiver of a large Canadian news print company will serve to illustrate what may happen:

"On September 10, 1932, the company, according to its records, had 135,264 cords of pulpwood situated at different places, available for operation of the Espanola mill, of a gross book value of $1,250,892. It is reported that a substantial quantity of such pulpwood has deteriorated in quality. Manufacturing costs at the Espanola mill, as computed by officers of the company, indicate that such pulpwood cannot be presently converted at Espanola into news print paper and such paper be sold under existing market conditions so as to give any return for the wood. It is possible that if such pulpwood be transferred to the Sault Ste. Marie paper mill some moderate recovery may be obtained if it is converted into news print paper there."

The price of news print has since declined over 20 per cent with imminent danger of still further declines.

You have already heard, at the news print hearing, that this vicious spiral of price cutting has turned the news print industry into a bankrupt industry.

A similar process has been going on in the other branches of the paper industry and while, fortunately, the forces of destruction have not as yet progressed so far in the other branches, nevertheless the condition is a very serious one.

I present charts illustrating the difficulties surrounding the industry. One of these charts shows how far the working capital of the outstanding companies in the industry was depleted in the one year 1932. This sort of thing cannot go on indefinitely without bringing about a collapse in the other branches of the industry similar to that which has occurred already with respect to news print. And, as you know, a collapse of the companies through whom employment comes means in the end the lowering of wages and the intensification of all those depressed conditions which it is the object of the Recovery Act to avoid.

Some improvement in these conditions has taken place during the last three months, due in part perhaps to the effect of the Recovery Act itself, but in order that this improvement may be sustained some further action is necessary. Individual manufacturers are helpless to accomplish thim. It must be accomplished by group action.

(b) *The Remedies Proposed.*

Sections 2 to 6 inclusive of Article VII of the code are designed to stop this vicious spiral of price cutting. They represent the means chosen by the industry in the endeavor to return to sane business practices They are only one step. They do not go very far. But at least, it is hoped that they will result in preventing manufacturers from selling below cost.

In substance, the code proposes to meet this evil of destructive and unfair price cutting, as follows:

First: by requiring the members of the industry to file their prices and adhere to the prices so filed until new prices are filed and for 24 hours thereafter.

Second: by requiring that prices filed by any member shall not be below the individual cost of that member, except where necessary to meet the competition of some other member having a lower cost.

The giving of secret rebates is one of the most unfair and destructive forms of price cutting. The provisions with respect to filing price lists are intended to prevent this unfair practice. They are also essential to the practical operation of the prohibition against selling below cost.

We anticipate that no objection will be made to them as similar provisions for open competition are contained in many of the other codes recently adopted, including the following:

Electrical Code—Article X.
Steel Code—Schedule E, section 2.
Oil Code—Article V.

This code provides that changes in the prices previously filed are to become effective 24 hours after they are filed. Some other codes have provided for longer periods. It has been thought, in the case of some of the divisions of the paper industry, where the members are widely scattered, that it might be desirable to permit the Executive Authority of the division to increase the length of the period for the taking effect of such changes. A provision to that effect is contained in the code.

It is also provided that a subordinate code of any division may provide, in accordance with the needs of that division, for some time limit for contracts for future delivery at the prices existing at the time of the contract. This is to prevent the steps now taken for the rehabilitation of the industry from being defeated by a few manufacturers entering into long term speculative contracts for large quantities of a product at prices based upon current levels. Such contracts would be exceedingly harmful in the event of rising costs, and it is necessary that the industry be in position to prevent abuses of this kind. However, contracts in existence on the effective date of the code are not affected.

Provisions against selling below individual costs have also been contained in a number of the codes already adopted, notably in the Electrical Code, Section IX, and the Ship Building Code, Section 7. Indeed, in the Lumber Code it is provided in Article IX that minimum prices may be based not upon individual costs but upon the weighted average cost of the entire industry.

The paper industry, however, after very careful consideration of the matter has reached the conclusion that a formula based upon individual costs alone might have certain very serious effects upon the industry. In view of the fact that many products of the industry are already selling below the cost, such a limitation might in actual practice operate to put out of business many of the higher cost but still efficient mills. This would be a dislocation of the industry which was never intended by the Act. Nor is such a drastic measure necessary to preserve efficiency because in many cases high costs are due to the present disturbed and abnormal conditions and are only temporary in character. To enforce an unqualified prohibition against selling below individual cost might, therefore, be unduly oppressive to small members of the industry and might destroy customer relationships which have existed for many years.

Accordingly the code contains the additional provision to the effect that an individual member may meet competition by filing prices as low as those filed by a lower cost competitor.

This provision involves a comparison of prices and in comparing prices it is necessary to know whether the prices are to be compared upon an f.o.b. mill basis or a delivered basis or some other basis. Inasmuch as our purpose is to permit a mill with higher costs to meet the competition of a lower cost mill, it follows that the basis of comparison must be the same as the basis of competition, that is, the cost to the customer. Accordingly, the code provides that in applying this provision all prices shall be calculated on a delivered basis. Delivered, however, is not in itself a precise term. Normally it means delivered on board cars at the home town of the customer. In some cases, however, the competition might be that of side-walk delivery, in some other cases provision might have to be made for water delivery either c.i.f. or otherwise. Another variable is in the difference between carload and less than carload freight rates. These variables are all obviously of a character for which it would be difficult to provide in a general code—variables which have to be dealt with from the point of view of specific problems rather than general phrases. Accordingly the code empowers the Executive Authority of each division to define in respect of each product just what constitutes delivery.

In order to make effective these provisions against unfair competition through cut prices, power is given to the Paper Industry Authority to determine whether there has been any violation of these clauses. If a schedule filed by any manufacturer fixes a price below the cost of that manufacturer, the Paper Industry Authority may determine the facts and, upon its giving appropriate notice, the prices so filed and any contracts based thereon will become void and of no effect.

The Paper Industry Authority can only find the existing price unfair. It cannot name a new price which must be substituted for the unfair price previously named. In other words, the Code contemplates that the Industry Authority may prevent violations of the Code but may not fix the prices to be charged by the members.

These provisions, preventing the sale of any product below cost, will go a long way toward remedying the abuses in the industry. It is possible, however, for prices to be established which though not below cost constitute in the light of all the circumstances unfair competition. The Paper Industry Authority is accordingly given power in the code to determine whether a price even though it is not below cost is an unfair price and if it is an unfair price, the finding of the Paper Industry Authority to that effect has the same result as its finding that a price filed is below cost.

For full understanding of the necessity for this last mentioned provision a statement of the problems which the industry faces and which it is hoped can be effectively dealt with by this clause will be made by Mr. Baldwin at the conclusion of my presentation of the subject matter of this article.

There is also a provision in the Code that if these provisions of the code should work out badly with respect to any division, because of some special condition existing in that division—such as the necessity of meeting the competition of some substitute product not sold under this code—the Executive Authority of that division may suspend the price provisions of this Code in whole or in part as applied to any products of that division—provided that the Paper Industry Authority is notified and subject to an appeal to the Administrator for the disallowance of such suspension.

SECTION 7. EXPORT SALES

Section 7 provides that bona fide export sales shall be exempt from the provisions as to the filing of prices, etc. Obviously there is every reason why American manufacturers should be as free as their foreign competitors in foreign trade with respect to these matters. This has been a customary exception in other codes.

T. H. George Fears Price Fixing

T. H. George, of the S. George Company, of Wellsburg, W. Va., attacked the provisions in Sections 3 and 4 of Article 8 as leading to price fixing. He stated further that Sections 5 and 6 should be clarified in respect to the powers of the central executive authority. No protection is afforded for information given to the code authority, Mr. George pointed out.

Col. Goodyear Says Minimum Kraft Wage Should Be Lower

Col. A. C. Goodyear, of the Bogalusa Paper Company, of Bogalusa, La., speaking for the Kraft and Sulphate pulp mills of the South, said that the minimum wage in the code should be lowered. He cited the lumber code as approved by President Roosevelt, setting 24 cents an hour for 40 hours work a week, in comparison with the 30 cents minimum set by the paper and pulp code. He stated that the government in its reconstruction work recognized that the South cannot pay a minimum wage as high as does the rest of the country. The minimum in his industry, in 1929, was 20 cents an hour, he said, and wages have been as low as 14 cents. Col. Goodyear cited the "contributions of the Southern Kraft industry to the NRA and National Recovery," the continued upward production and increasing wages paid by his industry since 1928. Production in that year of Kraft paper in the South amounted to 178,000 tons, 288,000 in 1932, and an estimated 325,000 tons for 1933. The 1933 production of sulphate paper was estimated to run 360,000 tons. He pointed out that the South employed very few women in the Kraft paper industry.

Other Speakers

Paul S. Fiske, chairman of the Parker-Young Company, of Boston, Mass., in reply to Mr. George, said that the code fully protected all statistical information required for the regulation of the industry. Paul S. Manize, speaking for the vegetable parchment manufacturers, urged that no disclosures be made of statistics to any individual or divisional competitors.

Deputy Pickard at this moment read a suggested addition to the code that governmental agencies be afforded such statistical data as the Administrator may decide necessary for the proper functioning of Section 3A of the National Recovery Act.

No protest was heard on Article 9 of the Code, general provisions, and Norman W. Wilson, chairman, Hammermill Paper Company, Erie, Pa., addressed Deputy Pickard to the effect that this article was concerned with three main ideas, namely, foreign competition, investigation of violations by the code authority, and definition of the type of recommendations the code authority may present. This article deals with matters such as the establishment of a standard method of cost determination; restrictions on the creation of new facilities of manufacture and acquisition of new equipment; terms and conditions regarding sales to dealers; balance between production and consumption; and the determination that any work incidental to the manufacture of any product of this industry shall be governed by this code rather than any other code.

Fine Spirit of Cooperation

In closing Deputy Pickard congratulated the industry on its "fine spirit of cooperation" in preparing a code for so diversified an industry.

He read a suggested addition to the code, calling upon members of the industry to cooperate with Secretary Wallace of the Department of Agriculture, state and local governmental and conservation agencies and the code authorities of other industries to take "practical measures" to conserve the forest resources of the country.

Paperboard Industry Hearing

Hearings on the code for the Paperboard Manufacturers were held the following day by Deputy Administrator Pickard, who was informed by the industry that the code would provide an increase of 28 per cent in the number of workers and 33 per cent in wages.

At the complimentary hearing on the paper and pulp industry code, an agreement was reached to divide the products of the industry into separate codes. The paperboard code will have jurisdiction, according to the definition in the code, over all papers known as "board, regardless of the raw material from which manufactured, having a thickness of 12/1000 or more of an inch; also of a lesser thickness known as light-weight chip; and also of a lesser thickness manufactured for use as corrugating material and/or containerboard, regardless of the raw materials from which manufactured; and also specialties not classed as paper, but classed as paperboard according to trade custom."

Labor Provisions

Labor provisions in the paperboard code are similar to those in the paper and pulp code, with the exception that the former applies wage rates by dividing the country into two instead of three zones, the "South" being designated as the country made up of Virginia, West Virginia, Arkansas, Texas, Louisiana and other states south of Virginia and Kentucky and east of the Mississippi River. In this area the paperboard code sets the hourly wage rates for male employees at 30 cents per hour and for female employees 25 cents an hour, while male workers in other states would receive 40 cents and female workers 30 cents an hour.

Salaries of office workers range from $12 per week in towns of less than 2,500 population to $15 per week in cities of over 500,000 population.

Hours in the paperboard code are set at 40 per week for both office and mechanical workers, except maintenance and repair crews and those working in towns of 2,500 and under, as well as those receiving more than $30 per week.

The so-called "open shop" and "merit clause" were both incorporated in an earlier code for the paperboard industry but were omitted in the revision.

Defends 40 Hour Week

Defense of the 8 hour day and 40 hour week and other labor provisions of the code was made by M. H. Beckwith, vice-president Morris Paper Mills, of Morris, Ill., who said that they would provide additional employment in the industry. He pointed out also that the wages in the code would be an increase over the past three months. He stated that before inauguration of the NRA movement there were 17,707 in the industry whereas there are now 22,753, an increase of 4983 or 28 per cent. The weekly payroll in the industry, based on 43 per cent of the mills, had increased from $385,426.00 before NRA to $510,812.00, a rise of $125,386.00 or about 33 per cent. Yearly estimates based on these figures would also show an increase of 33 per cent, he said. He also asserted that be-

fore the NRA the average weekly wage in the industry was $21.69 while today it is $22.45.

M. J. Burns Says Minimum Wages Are Too Low

Matthew J. Burns, labor advisor to Deputy Pickard, while approving the hours provisions in the code, said that the minimum wages were too low. He stated that the same type of labor is found in the paperboard as in the paper and pulp industry. He asked for rates of 42 cents an hour for male and 38 cents an hour for female workers in the North and 36 cents an hour and 34 cents an hour for male and female workers, respectively, in the South. Arthur Huggins, secretary of the International Brotherhood of Paper Makers asked for time and a half overtime rate to be applied for workers laboring more than the specified hourly rate, and also suggested that machine operations should be limited to 120 hours per week.

J. G. McIlvaine Favors Eliminating Sunday Work

J. G. McIlvaine of the Downingtown (Pa.) Paper Company, spoke in favor of eliminating Sunday work and restriction of machine operation hours to 120 per week. He stated that he was in favor of limiting machine operations to five days a week but said that this would not be possible so long as the paper and pulp industries had no restriction on machine hours in its code.

John L. Barchard, president of the Hummel and Downing Company of Milwaukee, Wis., spoke of the administrative features of the code. Deputy Pickard asked that the code committee of the industry provide pertinent statistics of the government in order that the proper functioning of Section 3-A of the National Industrial Recovery Act be assured.

General Trade Practice

M. B. Hall, vice-president and general manager of the American Boxboard Company, Grand Rapids, Mich., spoke on the general trade practice provision of the code. He said that this provision was to deal with three general problems of the industry, namely, to provide for meetings of individuals, groups or associations of those who have a common problem by reason of geographical location, product or market; to safeguard the interest of the minority; to develop orderly consideration by the industry of any plan of fair competition.

R. P. Beckett, of the National Paperbox Association, attacked the trade practise provision of the code on the grounds that it provides for meetings of inter-industrial groups but does not take into consideration the interests of the consumer. Mr. Beckett said he represented an association of manufacturers of paperboxes who annually consume about $15,000,000 worth of products of the paperboard industry.

Buffalo Waste Dealers Organized

Waste Material Dealers from Buffalo, Rochester, Jamestown, Dunkirk, Lockport and other points in Western New York, to the number of 150 or more held an enthusiastic organization meeting at Elmwood Music Hall, Buffalo, on Monday evening, September 11, and organized the Buffalo Waste Material Dealers Association affiliated with the National Association of Waste Material Dealers, Inc.

The Association will embrace a large number of wholesale dealers in waste materials and an equal number of retail dealers, which groups will work both as separate groups and jointly. Every branch of the waste material industry was represented and with membership applications already submitted, the Committee in charge of the meeting anticipates a 100 per cent membership within the next ten days.

Delegates sent from surrounding cities signed applications for memberships in the National Association of Waste Material Dealers, Inc., and will form groups in their own cities directly affiliated with the National Association.

Among those who addressed the meeting were Alvin Puls, director of the Industrial Recovery Service of the Buffalo Chamber of Commerce and Chas. M. Haskins, managing director of the National Association of Waste Material Dealers. Samuel Greenfield of Samuel Greenfield Company, Inc., presided and was elected to head the affiliated association. Arrangements for the meeting were in charge of Harry Z. Rosenberg of S. Schapiro & Sons, and others associated with him in addition to Mr. Greenfield were Eugene Loeser, J. V. Stovroff, Louis Rosen of the Buffalo Sash Weight & Foundry Co., L. Soronson, Samuel Carl, Jacob Lictman, A. Kerner, and David Shine.

Boston Paper Trade Happenings

BOSTON, Mass., September 18, 1933—About 60 were present at the meeting of the New England Paper Merchants Association held at the Hotel Touraine Thursday evening, with President F. Bendel Tracy in the chair. After the dinner, the NRA code was discussed.

Salesmen of all branches of the Arnold Roberts Company have received invitations to visit the Piedmont Mills, Covington, Virginia, this week. The salesmen will attend in two groups.

A settlement of tax claims of the town of Leominster, Mass., against the George W. Wheelwright Paper Company has been agreed upon by the assessors of the town and receivers of the company, which has been approved by the Court. The amount of taxes due has been reduced.

The L. E. Waterman Company has leased space on the tenth floor of the Waterman Building, 44 School street, to Hollingsworth & Vose Company for a term of years.

R. F. Chapin, assistant manager of the Millers Falls Paper Company, Millers Falls, Mass., and George A. Smith, of the New England Card and Paper Company, Springfield, Mass., called on the Boston trade last week.

H. L. Simons, of the A. M. Collins Manufacturing Company, Philadelphia, spent the day recently with Robert A. Ford, of the office of Henry L. Goodman, calling on the box trade of Boston. Henry L. Goodman is a distributor of box papers made by the Collins Company.

Cascade Mill to Resume

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Me., September 18, 1933—The Cascade Mill of the Brown Company, at Gorham, N. H., closed since May, 1931, will resume operations about October 1, according to an announcement of the concern, whose main offices are in this city. The plant is equipped for the production of bleached sulphite pulp. For a number of weeks repairing and replacing of machinery has been under way and wood delivered. The plant, which is near Berlin, where the company has other mills, has an equipment of eight digestors and a daily capacity of 350,000 pounds of pulp.

New Hungerford-Terry Bulletin

Hungerford & Terry, Inc., of Clayton, N. J., have just prepared an interesting new bulletin illustrating and describing the Hungerford-Air-Water-Wash Gravity Filter. A copy of this bulletin will be gladly sent to any interested persons.

Obituary

J. E. Truedel

J. E. Truedel, manager of the Chicago office of the Hampden Glazed Paper and Card Company, of Holyoke, Mass., died at his Chicago home on Friday, September 1. His sudden and unexpected death was the result of a combined attack of typhoid fever and pneumonia.

For the past fourteen years Mr. Truedel has been in the employ of the Hamden Company, first as general salesman. Later, on the retirement of F. B. Hazen, he was advanced to the position of general manager, in which position he was serving at the time of his death.

Mr. Truedel was a self-made man. Thrown on his own resources very early in life, he was obliged to support himself, and did so, serving in many different capacities, among them that of a reporter for one of Chicago's leading newspapers. In this capacity he undoubtedly acquired valuable experiences which served as a great aid to him in later years.

His pleasant address, his sterling character and his native ability won for him a wide circle of friends and made it possible for him to develop a successful business career. There will be general regret on all sides at his passing.

P. H. Smeallie

[FROM OUR REGULAR CORRESPONDENT]

AMSTERDAM, N. Y., September 16, 1933.—P. Henry Smeallie, president of Smeallie & Voorhees, Inc., paper manufacturers, died suddenly here this week from heart disease. He was 72 years old. He was stricken suddenly in his automobile while attending the dedication of a new recreation building in this city and died before medical aid could be summoned. Among the survivors is J. Donald Smeallie, who was identified with his father in the business.

Frank L. Nelson

[FROM OUR REGULAR CORRESPONDENT]

NORTON, Mass., September 4, 1933—Frank L. Nelson, president of the Sweet Paper Box Company here for a number of years, died August 27. His death followed an illness of about a year. A widow is living.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 20, 1933.—The Government Printing Office has received the following bids for 3,000 sheets of gray photo mount board; Barton, Duer & Koch Paper Company, at $63.25 per M sheets; Whitaker Paper Company, $64.50; R. P. Andrews Paper Company, $57.00 and $62.50; Mathers-Lamm Paper Company, 59.80, $67.04, and $71.60; George F. Muth & Co., $59.90 and $56.00; Charles G. Stott & Co., Inc., $62.00 and $57.00; Reese & Reese, Inc., $64.25; Dobler & Mudge, $64.90; Milton Bradley Company, $84.75 and $78.00; and Old Dominion Paper Company, $69.90 and $72.90.

For 3,000 sheets of red railroad board; Old Dominion Paper Company, $37.99 per M sheets; Holyoke Card and Paper Company, $36.30; Reese & Reese, Inc., $37.05; R. P. Andrews Paper Company, $39.90; Walker Goulard Plehn Company, Inc., $37.05 less 2 per cent; Virginia Paper Company, Inc., $38.00; Mathers-Lamm Paper Company, $39.20; Dobler & Mudge, $37.20; and Barton Duer & Koch Paper Company, $36.30.

International Paper & Power Co. Report

The International Paper and Power Company reports that consolidated gross sales in the second quarter of this year were $31,652,682 compared with $31,209,931 in the second quarter of last year; net revenue including other income, before changes, was $9,850,224 against $9,544,618; and a net loss of $1,535,417 after all charges including depreciations compared with a net loss of $1,856,237 in the second quarter of 1932.

In the first six months of this year consolidated gross sales were $61,684,573 against $67,126,769 in the corresponding period of last year; net revenue including other income, before charges, was $19,267,881 compared with $20,906,481; and a net loss of $3,774,490 after all charges including depreciation, against a net loss of $2,255,803 in the first six months a year ago.

Comparative consolidated statements are as follows:

	Quarter Ended June 30	
	1933	1932
Gross sales	$31,652,682	$31,209,931
Net revenue, including other income	9,850,224	9,544,618
Less: Interest, income taxes, and subsidiary dividends paid or accrued	7,895,927	8,015,924
Depreciation, depletion, amort. of disc.	2,629,012	2,644,367
Accumulated unpaid sub. divs. and undistributed minority interests	860,702	740,564
Net loss	1,535,417	1,856,237

	Six Months Ended June 30	
	1933	1932
Gross sales	$61,684,573	$67,126,769
Net revenue, including other income	19,267,881	20,906,481
Less: Interest, income taxes, and subsidiary dividends paid or accrued	15,864,375	16,529,810
Depreciation, depletion, amort. of disc.	5,325,527	5,337,620
Accumulated unpaid sub. divs. and undistributed minority interests	1,852,469	1,294,854
Net loss	3,774,490	2,255,803

(In the above statement all figures have been stated at parity of exchange without adjustment of differences between foreign and United States funds. It is the practice of the company to take into current operations any profit or loss on exchange at the time funds are actually transferred.)

In his remarks to shareholders, Archibald R. Graustein, president, says:

"Operations for the second quarter again resulted in a loss after all charges, but, in spite of a $5 a ton decline in news print prices effective on the first of April, there was improvement both as compared to the first quarter this year and as compared to the second quarter of 1932. Preliminary figures indicate a profit in July.

"From April through July the paper business steadily improved. Consumption of practically all grades increased, as did prices for most grades except news print. There has also been a substantial improvement in volume and some improvement in earnings in the power subsidiaries in New England.

"Consolidated notes payable of subsidiaries at July 31, 1933, totalled $19,317,423, a net reduction of $8,666,824 since the end of 1932. The $14,500,000 bank loans of International Paper Company which matured August 15, 1933, have been extended to August 1, 1934, subject to the payment of $1,000,000 on account on February 15, 1934, and $1,000,000 on May 15, 1934."

Stationery, Tablet & School Paper Manufacturers Association Formed

W. W. Sunderland, chairman of the Executive Committee of the Stationery, Tablet and School Paper Manufacturers Association, announces that Howard W. Selby has been appointed manager-secretary of the association. Offices have been temporarily established in Suite 916, Vanderbilt Hotel, New York. Later on permanent offices and headquarters will be established in New York.

Superintendents Organize on Coast

On the evening of Saturday, September 9, at the Olympic Hotel, Seattle, Wash., a meeting was held by members of the American Pulp and Paper Mill Superintendents Association who reside on the Coast. The purpose of the meeting was to form a Pacific Coast Division of the association. The meeting was attended by 27 members, eligibles, and friends, and was a very enthusiastic affair. Plans for the future activities of the new division were discussed, as well as plans for the increasing of the division's membership. It was decided to hold a convention in some pulp and paper community before the first of the year.

The membership of the new Pacific Coast Division is largely made up at present by members who have been transferred from the Northwestern Division, whose activities are mostly centered in Wisconsin. However, in recent years many of the members of the Superintendents Association have located on the West Coast, and for some time there has been sufficient numbers to warrant the action taken in Seattle. Among the members who have located in the West are two past presidents of the association who are active in the movement of forming the new division. They are Benjamin T. Larrabee, superintendent of the Pulp Division of the Weyerhaeuser Timber Company at Longview, Washington; and James Ramsay, superintendent of the Everett Pulp and Paper Company at Everett, Wash. With their knowledge of associations affairs, and guidance the success of the division is assured.

Many messages of a congratulatory and encouraging nature were received from prominent figures of the pulp and paper industry, and they were much appreciated by the men present.

The following officers were elected: H. Robert Heuer, Pulp Division, Weyerhaeuser Timber Company, Longview, Wash., and formerly chairman of the Northern New York Division of the Association, was selected as chairman; G. J. Armbruster, Puget Sound Pulp and Timber Company, Everett, Wash., 1st vice chairman; Ferdinand Schmitz, Jr., Rainier Pulp and Paper Company, Shelton, Wash., 2nd vice chairman; Henry C. Reimer, Hawley Pulp and Paper Company, Oregon City, Oregon, 3rd vice chairman, and H. A. DesMarais, General Dyestuff Corporation, 814 Terminal Sales Building, Portland, Ore., secretary-treasurer.

Extending Cellophane Plant

MONTREAL, September 16, 1933.—Canadian Industries Limited announce that work has begun on the extension of the factory at Shawinigan Falls, Que., where "Cellophane" is manufactured in Canada under contract with the Du Pont Cellophane Company, Inc.

Excavating has started for an addition to the moisture proofing building and some new equipment is being installed in the recently completed extension to the chemical building. L. W. Haslett, manager of the cellophane division of C. I. L., explains that these present extensions were contemplated in the original plans when the plant was projected, and are being carried out now in expectation of continued improvement in industrial conditions in Canada.

The cellophane plant at Shawinigan Falls is now making colored cellophane and is in a position to supply Canadian demand for all grades and colors.

This will mean another source of added revenue for the Shawinigan Water and Power Company, the dominant power producer in the St. Lawrence Valley. The operations of this company are showing a notable gain over those of the same period last year, largely due to increased activity in the pulp and paper industry.

Boston Paper Market Spotty

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 18, 1933—The wholesale paper market was somewhat spotty during the last week, some firms reporting a fair volume of business, others a quietness. The amount of advertising has increased in New England, so that printers are buying rather substantially for the preparation of booklets, circulars, etc., for their customers. Purchasers of bonds and ledgers have been buying more of the sulphite grades than those of rag content or all rag because of the lower prices. There was a little activity in wrapping paper and kraft specialties, although the tendency to mark time was noticeable. It was stated at one of the leading houses dealing in wrapping paper and specialties that if the volume of retail buying continued through September jobbers would have a good business the rest of the year.

Box board was comparatively quiet, although it is felt that a larger volume of sales will be realized in the not far distant future. The interest in picture puzzles has come back to a certain extent, with some firms manufacturing them again, together with containers.

With a greater demand for old newspapers, this grade of paper stock held its own, in fact the price advanced to .75 @ .80, compared with a former range of .70 @ .70½. Mixed papers are off, however, the price going down to .55 @ .60, against a previous range of .60 @ .65. No. 1 kraft has declined to 1.05 @ 1.10, compared with 1.25 @ 1.30. The maximum price of .77½ for corrugated boxes still prevails, but they are also quoted at .70. The rest of the grades of old papers are reported quiet and remain at the same levels. Bagging is moderately active, with a fairly good demand for mixed strings and gunny. Prices are unchanged. In new domestic rags, shirt cuttings are rather quiet, with values at the same levels. There is no change in the position of old domestic rags.

Bestolife

A new lubricant has been developed in which metallic lead is the protective element. The lead has been broken down into such finely divided parts as to be virtually a soluble or liquid lead within a lubricant vehicle. The new product, known as Bestolife, forms a thin protective film of lead on all contacting surfaces which changes such surfaces to a continuous unbroken, anti-frictional area, according to the manufacturers, Armite Laboratories of Los Angeles. The lubricant has a pure metallic lead base instead of lead salts and is said to be free from chemical reactions. The minimum constituency of lead in Bestolife is 10 per cent, ranging up to 65 per cent, and is claimed to withstand temperatures up to 430 degrees and will not entirely lose its lubricating stability until the melting point of lead is reached, which is 590 degrees. The principle application of the product in the paper industry is for use as a gear lubricant, also for bearings, chains, pump and valve stem packings, plug cocks, pipe threads, and guides. The manufacturers have issued a bulletin. Copies may be had by addressing Armite Laboratories, 1450 East 61st street, Los Angeles, California.

Air Conditioning for Paper Industry

The J. O. Ross Engineering Corporation, of 122 East 42nd street, New York, N. Y., has just issued an attractive, illustrated bulletin entitled "Air Conditioning for the Paper Industry", which concisely describes their newest development, the Ross Air Conditioner. This new type of equipment is already operating in paper mills. Copies of the bulletin may be obtained upon application.

Questionnaire on Rosin

In connection with the work of the Bureau of Chemistry and Soils of the U. S. Department of Agriculture, Washington, D. C., on rosin, one of the prime purposes of which is to help producers make rosin that is most acceptable to the consuming interests, the Division is sending out the following questionnaire:

1. What grade or grades of gum rosin do you generally use?
2. What grade or grades of wood rosin do you use?
3. Is the price or the color the governing factor in determining what grade or grades of rosin you buy?
4. Are you able to substitute one grade for another, and if so, how and to what extent?
5. Do you regularly check the grade of each lot of rosin as received to see that it is properly graded?
6. What kind of standards or types are used and when were they last renewed?
7. Other things being equal, would the substitution of a lighter or darker rosin, but not more than one full grade above or below the grade specified, harmfully affect your finished product?
8. What particular physical or chemical properties in rosin do you consider essential for your purpose?
9. Do you frequently find rosins which are unsuitable through failure to have these properties?
10. What change in any existing physical and/or chemical properties of rosin would make it more suitable for your purpose?
11. Do you buy rosin or any definite specifications other than by grade?
12. What tests, physical or chemical, do you make on deliveries of rosin to determine fitness for your purpose?
13. What if any trouble have you had in the use of rosin containing small quantities of iron, aluminum, copper or zinc?
14. Have you ever had any evidence of or tested for oxalic acid or metallic oxalates in rosin?
15. Have you ever had any evidence of the presence of sulphur or sulphur compounds in rosin, and what was its effect?
16. Gum rosin usually contains a small quantity of finely divided dirt. How much dirt (extraneous foreign matter, specks) in rosin would make it unsuitable for your purpose?
17. How much finely broken, whitish rosin conglomerate may be in the top of a barrel of rosin without making it unsuitable or objectionable for your use? Why is it objectionable?

It is requested by the Division that those who have not already received the questionnaire and are interested, fill out the above form and send it in to the U. S. Department of Agriculture, Bureau of Chemistry and Soils, Industrial-Farm Products Division, Washington, D. C.

To Represent Processed Paper, Inc.

Processed Papers Inc., of Camden, N. J., announce the appointment of Ernest W. Mantz as their representative in the New York Metropolitan area.

No enlargement of Mr. Mantz's experience in the handling of the general line of cover papers, tough checks, translucents and decorated book papers, is necessary.

Processed Papers Inc., on the door of Mr. Mantz's office located at 30 Church Street, New York City, is an invitation to the New York paper jobbers to get acquainted with an exceptional and individual line of coated papers now being produced by the Processed Papers Inc.

To Hear Paper Merchants Code Sept. 28

WASHINGTON, D. C., September 20, 1933.—Public hearings on a code of fair competition filed before the Recovery Administration by the Paper Distributing Trade will be held on September 28, at the Raleigh Hotel, with Deputy Administrator Pickard presiding.

The code fixes a maximum work week of 40 hours in any period of 60 days, not more than 48 hours in one week or 8 hours in one day for store and office employes except those in executive positions receiving $35 or more a week and outside salesmen; emergency crews, firemen and janitors 48 hours per week, and employes engaged in shipping service 40 hours a week, not more than 8 hours in any one day with a tolerance of 10 per cent, and employes engaged in trucking 48 hours per week; provided that persons between 14 and 16 years of age may be employed not to exceed three hours a day and those hours between 7 a. m. and 7 p. m. in such work as will not interfere with hours of day school, but not in manufacturing or mechanical departments.

The code also provides a minimum wage of $15 a week in cities of 500,000 population, $14.50 per week in cities between 250,000 and 500,000 population and $14 per week in cities of less than 250,000 population.

W. B. Wheelwright to Represent Columbian

William Bond Wheelwright has taken on the representation of the Columbian Paper Company of Buena Vista, Va. in Chicago. His address is 224 East Huron street. The Columbian lines include bristols, book paper, mimeograph, tablet and school papers.

Mr. Wheelwright has resigned from the staff of the Paper Foundation whose Paper Exhibit he was in charge of at The Century of Progress Exposition. He was largely responsible for the creation of this exhibit. The plans suggested by him last autumn were endorsed by the Middle Western Division of the Salesmen's Association and resulted in the formation of the Paper Foundation whose officers are Phil A. Howard, President, W. Noble Gillette, Vice President and Harold R. Knott, Treasurer. Mr. Wheelwright was chairman of the Exhibits Committee, and with C. W. Lynch, manager, arranged the exhibits at the World's Fair.

It is Mr. Wheelwright's plan to add one or possibly two more non-competitive mills to his list and act as a mill agent in the Chicago territory. Interested parties may communicate with him at the address given above.

Victor-Acme Blowers

Bulletin 21-B16, illustrating and describing Victor-Acme blowers, has just been published by Roots-Connersville-Wilbraham, Connersville, Ind. The Victor-Acme line includes a complete range of blowers in the smaller capacities, up to seven pounds pressure, or equivalent vacuums.

These blowers are offered in two types. The Type "SB" blowers, suitable for lower pressures, are fitted with renewable bronze sleeve bearings and semi-steel timing gears, and the Type "AFS" blowers, recommended for continuous service at higher pressures, are fitted with heat-treated steel gears and fully sealed anti-friction bearings.

Page one of the new bulletin lists about thirty of the principal uses and applications; page two describes features of the construction, and illustrates the two types in various driving arrangements, including direct-coupled, single pulley, and V-belt; page three carries a table of net capacities at listed pressures and speeds covering the eighteen sizes in which the blowers are available, and page four shows several views of Victor-Acme installations.

PAPER TRADE JOURNAL
ESTABLISHED 1872

Published at 34 North Crystal Street, East Stroudsburg, Pa. Executive and Editorial Offices, 15 West 47th St., New York, N. Y.

Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm,
Washington Correspondent

Price, Per Copy, 10 Cents
United States, Per Annum, $4.00
Canada, including tax, $7.50; Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. XCVII New York, September 21, 1933 No. 12

This publication is now and always has been printed on paper made in the U. S. A.

"LACK OF TARIFF DAMAGE TO NEWSPRINT MANUFACTURER"

Waldo Rosebush, manager of the Inland Empire Paper Company, of Spokane, Wash., in an interview in the *Spokesman-Review* of Spokane ascribes the plight of the news print industry in this country to the fact that it has no tariff protection and must compete with news print manufactured in foreign countries under low labor cost conditions. He explains that foreign mills have had a great advantage over domestic mills because of depreciated foreign currencies and expresses the belief that it will be impossible for United States mills to continue in business under NRA conditions while their foreign competitors have no such restrictions and have free entry to the United States markets.

Because of these factors United States mills are now and have been for months selling news print at less than cost, he says. Selling below cost is an unfair practice, under the national recovery act, yet the manufacturers can not raise their prices without assistance of the president, who is empowered to control foreign imports.

According to Mr. Rosebush, "There probably is not a news print mill in the country which would not pay 40 cents an hour minimum if foreign competition was controlled to give it a fair price for its product and tonnage enough to keep the mill running.

"Since 1930 the price of news print has dropped about 30 per cent in addition to a drop in sales volume of 45 per cent. Most of these reductions took place since September, 1931, when England went off the gold standard and the depreciation of foreign currencies began.

"Ten per cent of all news print imports in 1929, if added to United States production, would enable United States manufacturers to run their mills at capacity."

In 1929 Canada produced 2,728,827 tons of news print, of which 2,173,987 was imported by the United States.

The Canadian news print manufacturing industry has been growing steadily since 1911 when the United States tariff on imports was removed. In 1911 the import of Canadian news print into the United States was 54,484 tons, contrasted with almost 40 times as much in 1929.

While Canada's news print paper industry has been expanding enormously, developing a big payroll in the dominion, news print production in the United States has not increased.

Production in this country in 1911 was 1,366,609 tons; in 1916 was 1,314,740 tons; in 1920 was 1,511,968 tons; and in 1929 was 1,390,000 tons.

Bringing the picture up to date, Mr. Rosebush says that in 1932 United States mills produced 1,007,000 tons of news print while the country consumed 2,790,000 tons, importing about two-thirds of its requirements.

For the first five months of 1933 the output of news print in Canada was 14 per cent less than for the same period in 1932; but in the United States the output was 19 per cent less the first five months of this year as compared with 1932.

There has been a tariff on all grades of paper, other than news print, since 1911. As a result of this tariff, the manufacture in this country of paper other than news print, has increased. This demonstrates the beneficial results of a tariff.

In addition to the low cost labor advantage of foreign news print producers, they have an advantage of from 15 to nearly 50 per cent in selling against U. S. mills, because of currency depreciation.

"In effect," says Mr. Rosebush, "the depreciated currencies pay the foreign manufacturer a bonus for selling his product in the United States.

"Under the national industrial recovery act, this situation must be considered and taken care of. Otherwise the foreign manufacturer would still be able to undersell the American manufacturer, and demoralize every effort to increase employment and raise wages.

"The retaining of the industry in the United States probably would add not less than $200,000,000 yearly to the value of this billion dollar enterprise and provide 50,000 to 60,000 new jobs."

Mr. Rosebush says there is no danger of serious depletion of U. S. forests if the news print industry here is developed. Scientific developments enable the use of much wood that was formerly wasted.

In Alaska there are 23,000,000 acres carrying large stands of pulp wood. In the Tongass forest alone there is 78,500,000,000 board feet of commercial timber on 3,000,000 acres.

It is estimated by a forestry expert that 20,000,000 acres of well managed high grade forest land in Oregon, Washington and northern California would produce from 20,000,000 to 40,000,000 cords of wood per year perpetually;

whereas total consumption in the United States for all purposes in peak years was less than 14,000,000.

Mr. Rosebush presents a vivid picture of the handicaps under which the news print industry in the United States is laboring and he accurately states that the domestic industry has practically not expanded at all since the tariff was taken off news print during the Taft administration in 1911. So far as we can recollect only three or four news print mills were built in this country since that date.

As implied in the remarks of Mr. Rosebush, it would seem that this situation could be easily remedied, but old members of the industry who remember the episode of 1911, when a republican administration betrayed the news print industry, will be skeptical, just as the PAPER TRADE JOURNAL is, of the possibilities of securing a protective tariff on news print even at the present time and under prevailing conditions.

It has been said many times that the news print manufacturers have a tough set of customers to deal with and the truth of this assertion has been demonstrated on many occasions. It was made particularly obvious in 1911 when staunch republican papers whose policy was for effective protection to practically every other commodity joined the free traders in wielding this powerful influence to wrench news print from the protected list. This influence obviously is not less powerful now than it was in 1911 and regardless of political views, we believe it will be exerted now in favor of free news print just as powerfully as it was then. While the PAPER TRADE JOURNAL regrets this, it feels that it should be clearly and frankly pointed out at this time so that those who perchance do not remember the past and have visions of protected news print may, in the light of history, appreciate just what stands in the path of any such consummation.

Signs of Revival in Canada

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 18, 1933.—From Edmundston, N. B., it is reported that all three pulp and paper plants of the Fraser Companies, Limited, are now working full time, and that with a marked improvement in the demand for sulphite pulp, prices are now on a better basis. The Madawaska mill is now being conducted under the NRA code, operations being limited to five working days of eight hours each per week. At the same time wages have been increased to the extent of about $250,000, the increase being taken care of through a larger volume of business. Lumbering operations of the Fraser Companies have also improved through increased exports to Great Britain.

The Port Royal Pulp and Paper Company, of Fairville, N. B., is installing a new heating system, and this connection has placed with the Dominion Bridge Company, of Montreal, an order for two oil tanks, one with a capacity of 2,000,000 gallons and the other with a capacity of 3,000,000 gallons. A pipe line of 1,000 feet of 10-inch feed leaders is to be added connecting the tanks and mill.

From Quebec it is announced that the Donnacona Pulp and Paper Company is increasing its operations and taking on 4 more men. A pulp making machine which has not been used for two years has been put into operation. The pulp produced will be shipped to Europe.

Plant Efficiency Now Vital Factor

Following what is reported to be a successful fight against the NRA attitude that plant improvements, looking toward elimination of wasteful procedure and speeding up of production, are not in line with the recovery program, management engineers are now preparing to handle a large volume of business under the new industrial conditions, according to leading executives in the field here, says the New York *Times*.

Sharply rising prices, higher wage scales, misinterpretations of the various codes and shorter running hours are some of the factors that will necessitate measures for the elimination of waste, stricter material control, rearrangement of plant layout, better production planning methods and the simplification of all routine, according to engineers yesterday.

While General Johnson has publicly stated that the NRA does not put a premium on inefficiency, a recent incident caused management engineers to protest to Washington. One of the administrators, in reply to a request from a manufacturer as to whether the employment of engineers to improve efficiency was in line with the recovery program, stated that he did not believe such a move was. While no official statement has been made on the subject, it has been indicated unofficially to engineers that the recovery administration will hereafter keep hands off all questions of improving plant technique.

Engineers said yesterday that no great demand for their services has ensued as yet, except from those industries whose codes have been approved and are now in operation. When the great majority of programs are out of the way, engineers predict that they will be more sought after. Some requests have come in from cotton and woolen mills.

There will be no change in the attitude of management engineers toward their work, except that they will discard the use of such words as labor economy or other phrases that might indicate the purpose of reducing the number of employees. There is still a considerable amount of inefficiency among many industrial plants, it was pointed out, and if they are to remain in business they must bring costs into line with their more efficient competitors.

The main object of engineering investigations in plants will be to obtain full value for labor in every respect. With a greater labor content for industry, it will be more necessary than ever to see that the maximum amount of work is given by employees.

As part of this aim, engineers will ascertain that the wage rates of a company are in balance within the plant and also in relation to the locality under the code. Non-productive labor in the factory, office and sales force will be scrutinized carefully to eliminate any waste. Economical supervision of production will also be sought, with the wage scales and ability of foremen, superintendents and other plant executives reviewed carefully.

Wage incentives will be used to the utmost, engineers declared. They expressed the opinion that in a general way such incentives can do more for manufacturers under the recovery codes than any other single factor.

Another element which will be included in plant improvement programs is the rearrangement of factory layouts. Proper layout will eliminate waste in moving material, avoid the necessity of long hauls and indirectly reduce the need for non-productive labor.

Engineers concluded by saying that the recovery program is a definite challenge to industry to put its house in order, to eliminate the wasteful and unfair competitive practices that have created chaos and to establish a sound structure, through which products can move from the plant to the consumer at the lowest possible cost.

YOU CAN GIVE

INCREASED WHITENESS

WITH

INCREASED OPACITY

TO YOUR PRESENT TYPE OF PAPER

Add one of the range of ZINC SULPHIDE PIGMENTS, with Zinc Sulphide present in different amounts to provide various degrees of opacity, and improve whiteness and brightness while improving opacity. We shall be glad to discuss your problems in connection with which ZINC SULPHIDE PIGMENTS offer:

OPACITY
- In a coated sheet • In a filled sheet • In a waxed sheet
- In a highly calendered sheet
- In a highly beaten sheet

WHITENESS

BRIGHTNESS

HIGH REFRACTIVE INDEX

SMALL PARTICLE SIZE

SMALL EFFECT UPON STRENGTH

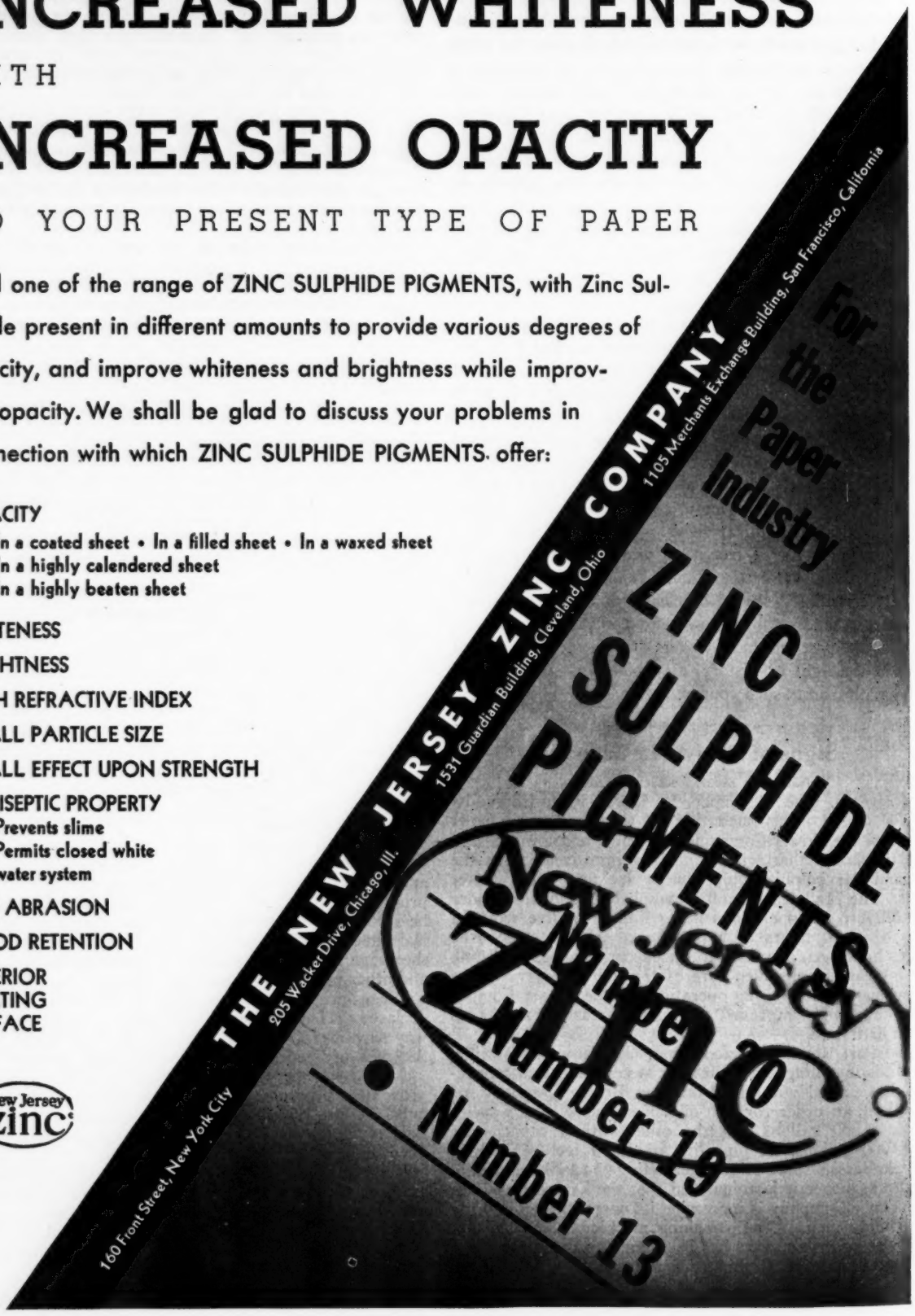
ANTISEPTIC PROPERTY
- Prevents slime
- Permits closed white water system

LESS ABRASION

GOOD RETENTION

SUPERIOR PRINTING SURFACE

New Jersey zinc


THE NEW JERSEY ZINC COMPANY
160 Front Street, New York City
905 Wacker Drive, Chicago, Ill.
1531 Guardian Building, Cleveland, Ohio
1105 Merchants Exchange Building, San Francisco, California
For the Paper Industry
ZINC SULPHIDE PIGMENTS
New Jersey Zinc
Number 10
Number 19
Number 13

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps

Pulp and Paper Testing

Permeability of Gases and Vapors Through Packing Papers and a Simple Measuring Apparatus. Takeo Aono. J. Soc. Chem. Ind. Japan 35 (Supp. Binding): 443B-444B (Oct., 1932).—The apparatus consists of two hollow hemispheres between which the test sheet is held. The upper hemisphere (of volume *a*) is connected to a mercury manometer and a gas inlet tube through two three-way cocks; the lower one (of volume *b*) is connected to a small sphere (of volume *c*) and to the gas inlet tube through a three-way cock. To determine the permeability of paper, the whole apparatus is evacuated to a pressure P_0, the sphere is filled with the desired gas to a pressure P and this is expanded into chamber B. The volume *V* of gas which passes through the sheet of a unit area in unit time with a pressure difference of 1 mm. of mercury is given by $V = k'a/760S$, where *S* is the area of the test sheet and $k' = (P_A - P_0)/P_1t$—A. P.-C.

Moisture-Indicating Instrument for Wood. Chauncey G. Suits and Matthew E. Dunlap, dedicated to the Government and the Public. U. S. pat. 1,875,359 (Sept. 6, 1932).—The instrument comprises two dependent electric circuits; one circuit (the standard) includes a fixed resistance and a fixed condenser connected electrically in series and with a neon glow lamp shunted around the condenser in such a way it will flash at a fixed rate per minute; the other circuit (secondary or test) contains a fixed condenser, the capacity of which is definitely related to a certain moisture content of wood and with a neon glow lamp shunted around it and connected in series with electrodes capable of being driven into the wood, and thereby forming the resistance to be measured by observing the rate of flash of the test lamp as compared to that in the standard circuit. It is thus seen whether the wood contains more or less moisture than that established by the capacity of the condenser in the test circuit depending on whether the test lamp flashes faster or slower than the standard lamp.—A. P.-C.

Comparison of the Porosity Values According to the Schopper Method With the Densometer Values According to the Gurley Apparatus. R. A. Krauss. Papier-Fabr. 30, No. 23A: 96-7 (June 4, 1932).—A curve is given for converting one porosity value to the other. Two equations, one theoretical $6992/S - G = 0$ and the other derived from actual experiment $7300/S - G = 0$, where *S* is the Schopper value and *G* is the Gurly value. The slight difference is due to the decrease in specific pressure with the Gurley apparatus, while the cylinder gradually sinks.—J. F. O.

Evaluation of Stock and the Properties of the Paper. P. M. Hoffman, Papier-Fabr. 30, No. 39: 577-79 (Sept. 25, 1932).—The different tests made on the paper are described, in particular, a new method for determining the stiffness of paper is discussed in detail.—J. F. O.

Methods and Apparatus for the Measurement of the Smoothness of Papers. W. Brecht. Papier-Fabr. 30, No. 29: 457-63 (July 17, 1932).—Complete description of the various methods used. Two of the methods were based on the coefficient of friction, the Jones method depended on the rubbing coefficient of motion of metal on paper, while the Rendall method was at rest and with paper on paper. But both these methods were unsuitable since the hardness of the papers affected the readings. In the Beckk method, a source of light was used which registered, on a photographic strip, the uneven surface. Other methods discussed, one in which the time for a certain quantity of air to pass between the paper and a polished metal disc. Many illustrations and photographs accompany the article.—J. F. O.

The Design and Care of Pulp Strength Testing Equipment. Paul Boronow. Paper Trade J. 95, No. 24: 27-29 (Dec. 15, 1932).—The fundamental requirements on which the Valley Iron Works pulp strength testing equipment is based are outlined, and a specimen procedure which has been worked out for this equipment is described.—A. P.-C.

The Characterization of Pulps and Stuffs. P. K. Baird and R. H. Doughty. Paper Trade J. 95, No. 24: 30-34 (Dec. 15, 1932).—Attention is drawn to an analysis of pulp and stuff properties which may serve in their characterization, an outline of available methods of tests and a classification of these test methods with a suggested decimal scheme for their grouping under logical and proper headings.—A. P.-C.

The Tear Strength in the Testing of Pulp. A. Luttgen, Zellstoff Papier 12, No. 11: 435-37 (Nov., 1932).—In opposition to G. K. Bergman, the author shows by

Attention Pulp and Paper Mill Executives

The Eighteenth Annual Fall Meeting of the Technical Association of the Pulp and Paper Industry is to be held at Appleton, Wis., September 26, 27, and 28, 1933.

From the standpoint of technical information available during these three days, this meeting beyond doubt will be a memorable one. The Institute of Paper Chemistry, The United States Forest Products Laboratory, and several individuals are to present a comprehensive report of basic and applied research embodying recent developments in equipment and processes.

One complete day of the meeting is to be devoted to the presentation of technical papers by staff members of the Institute of Paper Chemistry. These papers will deal with the subject of pulping high yields from aspen wood, factors influencing the bleaching operation, contribution to the knowledge of rosin sizing, cooking of rags, etc.

A second complete day is to be devoted to the presentation of technical papers by members of the United States Forest Products Laboratory, Madison, Wis. Included in the list of papers will be such subjects as: cooking western hemlock, chemistry of alkaline wood pulping processes, comparison of various sheet machines, paper machine variables, etc.

In addition to the presentation of papers, the buildings and equipment of these two great organizations will be open to inspection by all attending the meeting; members of the staff of both institutions being available for discussion of problems pertaining to the manufacture of pulp and paper.

The fund of knowledge to be made available to the members of the Technical Association of the Pulp and Paper Industry justly warrants the expenditure made by any executive in sending a representative of his particular plant to Appleton for the three days, September 26, 27, and 28, 1933.

means of comparative tests of spruce and hemlock pulps, the importance of the tear strength in the valuation of pulps.—J. F. O.

Meeting of the Committee on Strength Testing of the German Technical Association of the Pulp and Paper Industry, in Kothen, April 2, 1932. Papier-Fabr. 30, No. 23: 354-59 (June 5, 1932).—Complete description of the various apparatus and methods used in determining a standard method for the testing of pulp. A method is finally given the details of which are described, such as, the preparation of the stock, sheet making, drying, testing, etc.—J. F. O.

Contribution to the Problem of Strength Tests. V. Possanner. Papier-Fabr. 30, No. 48: 676-82 (Nov. 27, 1932).—Results are given of experiments conducted on sulphite pulp using different beating machines, such as, knife beater, Rieth beater, propeller, and kollergang. Tearing length and Schopper Riegler "freeness" tests are made on the test sheets. Numerous curves and tables are added to show the results.—J. F. O.

Apparatus for Measuring the Thickness of Paper. Frank Sawford, assignor of one-half to Frank Sawford, Jr. U. S. pat. 1,882,962 (Oct. 18, 1932).—A beam of light from a lamp is concentrated and directed on the paper to be tested. A photo-electric cell is mounted on the opposite side of the paper and is connected with an electric circuit containing an instrument for measuring variations in the current flowing through the circuit. A shutter is interposed between the lamp and the cell normally intercepting the light from the lamp, and means operated by the paper hold the shutter out of the path of the lamp.—A. P.-C.

New Methods of Fiber Investigation. M. Ludtke. Faserforschung 10, No. 1:43-58 (Nov. 30, 1932): Bull. Inst. Paper Chem. 3:111.—This is a discussion of several fiber tests from a microscopic point of view. The following tests are described: Measurement of fibrile length and the length of the fiber section after carbonizing; making the inner structure visible; swelling analysis; reaction with phloroglucinol-hydrochloric acid; detection of cellulose with zinc chloride-iodine and other color reactions: chemical identification of polymeric carbohydrates.— C. J. W.

New Methods of Fiber Investigation. K. Schneider. Faserforschung 10, No. 1:59-62 (Nov. 30, 1932).—A reply to Ludkte (preceding abstract) and criticism of many of his statements.—C. J. W.

Measurement of Fiber Widths by the Wedge Method. Melliand Textile Monthly 4, No. 3. 3:182-184; No. 4:238-240; No. 7:428-431; No. 8:486-487 (June, July, Oct., Nov., 1932); Bull. Inst. Paper Chem. 3:111-112.—A new method is described for securing the accurate measurement of the width of a fiber by the use of the wedge rule. While originally destined for wool fibers, it can also be applied to cotton, silk and rayon.—C. J. W.

Modern Paper Technical Laboratory. A. J. Brax. Pappers-Trävarutid. Finland 14, No. 23:848-850; No. 24:870-871 (Dec. 15, 31, 1932); Bull. Inst. Paper Chem. 3:149.—Description of a new paper technical laboratory, which was opened a few months ago for the use of the students at the Polytechnical University of Helsingfors.—C. J. W.

Calculating the Value for Pulp Strength. B. V. Weissenberg. Svensk Pappers-Tidn. 14, No. 24:876-879 (Dec. 31, 1932); Bull. Inst. Paper Chem. 3:145.—Strength tests form an important part of routine control testing in every pulp laboratory. The author constructed a special chart for calculating the bursting strength value, thus simplifying these tests to a great extent.—C. J. W.

Fiber Fractionation as an Analytical Method for Paper Stock. C. Anker and K. Haug. Papir-J. 20, No. 21:225-228; No. 24:269-272 (Dec. 15, 31, 1932); Bull. Inst. Paper Chem. 3:145.—The authors endeavor to prove that the percentage of fibers and flour in a pulp mixture is one of the decisive factors which determine the characteristic properties of the resulting paper. They use Hurum's flour tester with wire strainers of different mesh size for their experiments. A higher breaking length and a slower pulp result when the percentage of flour in the stock increases.—C. J. W.

Measuring the Diffusion of Water Vapor Through Paper. Papir-J. 20, No. 21:233-234 (Dec. 15, 1932); Bull. Inst. Paper Chem. 3:144.—An apparatus is described for measuring the diffusion of water vapor through paper. The instrument as used for determining the suitability of paper bags for wrapping hygroscopic goods.—C. J. W.

Paper Testing Instruments Make Possible New Tests. R. Fuess, Inc. Instruments 6, No. 1:22 (Jan., 1933); Bull. Inst. Paper Chem. 3:144.—A description of the following new paper testing instruments is given: the Bekk smoothness and porosity apparatus; the dusting or fuzz tester and the stiffness tester.—C. J. W.

Moisture Measurements on Paper Machines. G. E. Krogh. Papir-J. 20, No. 21: 234-235 (Dec. 15, 1932); Bull. Inst. Paper Chem. 3:137.—The siccometer and its applications are described.—C. J. W.

Standardization of the Qualities of Cellulose. A. G. Laube. Bum. Prom. 11, No. 10:21-26 (1932); C. A. 27-593.—A critical review is given of the tests and results in the physical examination of pulp.—C. J. W.

Paper Specialties

One-sided Finish. Otto Jung, Ravensburg. Zellstoff Papier 12, No. 6: (June, 1932).—Before the paper is given the one-sided finish, it should have passed over 70 to 75 per cent of the drying surface. The paper is then moistened on one side and time should be allowed for this moisture to penetrate. A great number of important facts are given concerning the parts of the machine, the clothing and the method of operation. Five sketches are added showing the method of operation of the machine.—J. F. O.

Process for the Manufacture of Pliable, Transparent Foil. Viktor Bausch, Berlin & Felix Schoeller & Bausch. Ger. pat. 554,940 (April 7, 1927).—The raw paper is drenched in a dissolved clarifying agent.—J. F. O.

Process for Softening Cellulose Sheets, Such as Cellulose Wadding and Similar Materials. Vereinigte Papierwerke Akt. Ges. Nurnberg. Ger. pat. 564,301 (May 19, 1927).—J. F. O.

Process for the Production of a Finishing Material for Paper. Siebenhirtner chem. Industrie Werk G.m. b.H., Vienna. Ger. pat. 564,873 (Sept. 3, 1927).—By means of saponified fatty acid salts of the zinc group, certain desirable properties are given to the paper. For example, 15 parts of stearine is saponified with 6 parts of caustic potash of 50° Be′ and to the resulting product is added 100 kilograms of a 5 per cent aqueous solution of zinc sulphate.—J. F. O.

Process for the Production of Materials With a Leather Character and a Silky Luster, As for Example, Wall Paper and Similar Materials. Friedrich Eckstein, Vienna. Oust. pat. 127,806 (Dec. 15, 1931).—Crepe paper is impregnated with suitable materials to give it the desired properties.—J. F. O.

Process for the Treatment of Cellulose Plates with Etching Liquids. Wilhelm Dutzmann, Neustadt. Ger. pat. 556,322 (Sept. 21, 1929).—J. F. O.

Process for Obtaining Higher Smoothness, Finish and Sensitivity of Printing on Paper. Zschimmer & Schwarz Chemische Fabrik, Dolau. Ger. pat. 557,237 (Dec. 28, 1930).—Metallic salts of the ester acids of higher aliphatic alcohol with polybasic inorganic acid or organic acids and if necessary binding materials such as casein, gelatine, soap, are added to the stock. The resulting paste is added to the beater in the proportion of 1 to 3 per cent of the fiber weight.—J. F. O.

The Opacifying of Paper by Means of Titanium Pigments*

(A Preliminary Report)

By William R. Willets[1]

Abstract

It is evident from the data given herein that the addition of even small amounts of titanium pigments, either as beater additions, or in conjunction with surface size, increases the opacity of paper very considerably. Not only do these sheets increase opacity, but because of their high and neutral whiteness, paper is made much brighter and has excellent color. Because of the exceeding fineness of the pigments, approximately 0.5 microns effective particle size, and their absolute freedom from grit, the printing surface imparted is excellent.

Because of the absolute inertness of these pigments, they will not discolor the paper, regardless of the pH in the beater, or the surface size. Likewise, these inert properties resist any atmospheric action in the finished sheet. They are permanently white.

Fillers such as clay, blanc fixe, talc, etc., have long been used as loading materials in the paper industry. Recently, opaque pigments, such as are used in the paint industry, are finding increasing applications.

Important among these are the titanium pigments, pure titanium oxide, titanox-B regular, (blanc fixe with titanium oxide coalesced on it in the ratio 75:25), and titanox-B, 17 per cent (blanc fixe with titanium oxide coalesced on it in the ratio 83:17). These pigments, together with their general properties, manufacture, history, etc., have been more fully described in a paper, "The Use of Titanium Pigments in the Paper Industry," published in the PAPER TRADE JOURNAL.[2]

The present article presents some studies on the use of these pigments for the loading of paper, and for their application in conjunction with surface, or tub sizing.

RECEIVED SEPTEMBER, 5, 1933.

* To be presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Appleton, Wis., September 26-28, 1933.

[1] Member TAPPI, paper chemist, Titanium Pigment Co., Inc., 111 Broadway, New York, N. Y.

[2] Willets, W. R., Paper Trade J., 97, No. 10: 28-30, (Sept. 7, 1933).

Sheet Preparation and Opacity Measurements

The beating studies were all made using the pebble mill. In the case of the A-1 bleached sulphite pulp, the pulp was thoroughly disintegrated by means of the standard agitator, described in the beater method for testing pulp, (TAPPI Standard T 200m) and added to the pebble mill with 2 per cent rosin size. After a half hour beating with 10 pounds of flint pebbles (at 60 r.p.m.), the pigment was added in a slurry with 2 per cent modified starch, (based on the oven-dry pulp); after a further hour beating, sufficient alum was added to lower the pH to approximately 4.4, and after an additional half hour, the mill was dumped. In the case of the alpha pulp, the pulp was beaten for 7 hours total time because of its slow hydrating properties. Sheets were made up on a Valley Sheet machine, 10¼ inches by 10¼ inches.

The surface sized sheets were made on an experimental machine built at the National Lead Company laboratories. Two grades of bond and one of book were surface sized with modified starch suspensions containing various amounts of titanium oxide.

All opacity measurements were made on the new Bausch and Lomb Opacimeter, designed by M. N. Davis. In the case of the bond sheets, an average of five readings were made on each of the four sheets

for each weight. Each datum in the tables therefore represents twenty readings. The variation for a given sheet was in the range ± 0.05, for different sheets of the same series, ± 0.1. Ten sheets of the surface size series were measured for each datum, the variation being within ± 0.05. Ten readings were made on each of the commercial run sheets.

Retention

Typical retention data are given in Table 1 and Fig. 1.

TABLE I

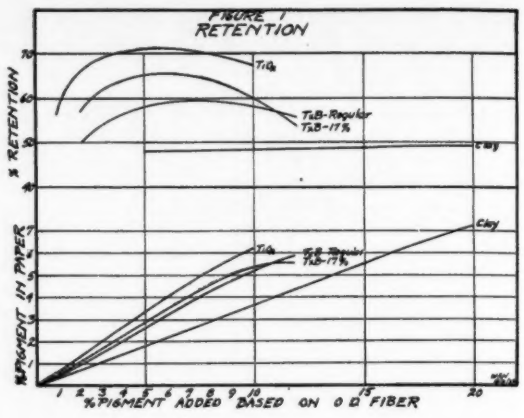
TYPICAL RETENTION DATA

Kind	Pigment per cent added based on o.d. pulp	Per cent in paper o.d. basis	Retention Per cent
Titanium oxide	1	0.55	55.8
Titanium oxide	2	1.31	67.1
Titanium oxide	4	2.74	71.5
Titanium oxide	6	3.85	68.5
Titanium oxide	8	5.42	73.5
Titanium oxide	10	6.07	67.1
Titanox-B regular	2	0.97	49.7
Titanox-B regular	4	1.88	49.2
Titanox-B regular	6	3.35	59.4
Titanox-B regular	8	4.37	60.0
Titanox-B regular	10	5.20	57.5
Titanox-B regular	12	5.97	56.0
Titanox-B 17 per cent	2	1.09	55.8
Titanox-B 17 per cent	4	2.46	64.0
Titanox-B 17 per cent	6	3.46	61.4
Titanox-B 17 per cent	8	4.93	66.7
Titanox-B 17 per cent	10	5.48	60.5
Titanox-B 17 per cent	12	5.82	54.5
Clay	5	2.03	49.3
Clay	10	3.70	47.0
Clay	15	5.68	49.9
Clay	20	7.36	50.4

Laboratory retentions, in the case of the titanium pigments, are often about 10-20 per cent lower than actual mill practice because of the non-recovery of white water, high initial suction on the sheet machine, etc. Naturally, when approximately 100 per cent of the white water is recovered, retention may be 90 per cent or better.

Retention, naturally, is affected by the hydration of the pulp, character of the pulp, degree of sizing, pH, speed of the machine, position and amount of suction on the wire, white water recovery, etc.

However, the data given herein are interesting for comparative purposes. Pure titanium oxide has the best



retention, followed by Titanox-B, 17 per cent, and regular Titanox-B. The retention of clay is very much poorer. The titanium pigments all reach a maximum retention at between 5 to 8 per cent addition. More emphasis should be given to the curves for "Pigment in Paper" vs "Per Cent Pigment Added" than to the actual retention curves, since these latter magnify slight difference in pigment content greatly, and are more in the nature of "trends." All data are for 55 pound sheets, made of A-1 bleached sulfite and treated in absolutely the same manner as regards pebble mill beating, sizing, etc.

Opacity

HAND SHEETS

The data for the opacity of the hand sheets made from bleached sulphite are given in Table II and Fig. 2. The superiority of pure titanium oxide is clearly demonstrated, the opacity being raised from 0.70 to about 0.88 for the light sheets (28 pound basis), from 0.78 to about 0.93 for the medium sheets, (45 pound basis), and from 0.81 to about 0.97 for the heavy sheets (55 pound basis), at a 5 per cent pigment content. Titanox-B regular was

TABLE II

OPACITY—PIGMENTED A-1 BLEACHED SULPHITE

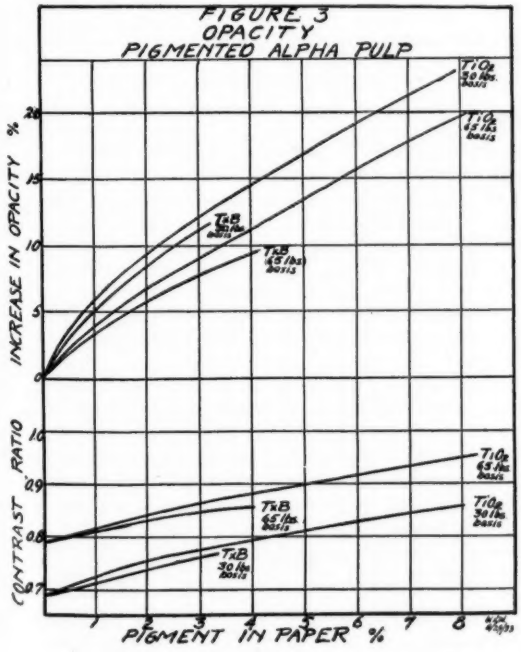
Light Sheets 28 Lbs. (24 x 36—500)				Medium Sheets 45 Lbs. (25 x 38—500)				Heavy Sheets 55 Lbs. (25 x 38—500)			
Pigment		Opacity Contrast Ratio	% Increase in Opacity	Pigment		Opacity Contrast Ratio	% Increase in Opacity	Pigment		Opacity Contrast Ratio	% Increase in Opacity
Kind	Per cent in Sheet			Kind	Per cent in Sheet			Kind	Per cent in Sheet		
None	0	0.700	0	None	0	0.780	0	None	0	0.810	0
Titanium Oxide	0.38	0.745	6.43	Titanium Oxide	0.39	0.810	4.62	Titanium Oxide	0.55	0.831	2.59
"	0.88	0.761	8.73	"	1.17	0.848	8.70	"	1.07	0.862	6.42
"	1.06	0.765	9.29	"	2.36	0.864	10.75	"	1.31	0.867	7.03
"	1.98	0.768	9.72	"	2.56	0.895	14.73	"	2.37	0.876	8.15
"	2.43	0.807	15.29	"	3.34	0.903	15.75	"	2.74	0.891	10.00
"	3.00	0.836	19.43	"	3.61	0.906	16.16	"	3.49	0.929	14.70
"	3.39	0.850	21.41	"	4.59	0.928	18.95	"	3.85	0.933	15.16
"	4.29	0.876	25.14	"	5.24	0.930	19.20	"	4.77	0.937	15.70
"	5.50	0.877	25.29	"	5.51	0.931	19.35	"	5.42	0.967	19.35
"	5.64	0.892	27.43	"	5.75	0.943	20.90	"	6.07	0.969	19.65
Regular Titanox-B	0.74	0.712	1.71	Regular Titanox-B	0.76	0.796	2.05	Regular Titanox-B	0.51	0.830	2.65
"	1.34	0.739	5.57	"	1.30	0.815	4.48	"	0.84	0.839	3.57
"	1.39	0.740	5.71	"	1.34	0.821	5.25	"	1.50	0.844	4.19
"	1.69	0.745	6.43	"	1.86	0.828	6.15	"	1.94	0.845	4.33
"	1.83	0.755	7.86	"	2.16	0.836	7.18	"	1.98	0.846	4.44
"	2.15	0.760	8.57	"	2.76	0.840	7.69	"	2.33	0.848	4.68
"	2.51	0.767	9.57	"	2.90	0.843	8.08	"	2.44	0.858	5.92
"	3.25	0.769	9.86	"	3.02	0.844	8.21	"	3.54	0.880	8.63
"	3.92	0.780	11.43	"	3.80	0.848	8.72	"	4.07	0.886	9.39
"	4.11	0.794	13.43	"	4.03	0.863	10.61	"	4.47	0.895	10.50
"	5.08	0.800	14.39	"	5.76	0.890	14.09	"	5.77	0.911	12.50
"	5.63	0.806	15.14	17 per cent Titanox-B	1.15	0.800	2.81	17 per cent Titanox-B	1.12	0.823	1.61
17 per cent Titanox-B	1.03	0.710	1.44	"	2.27	0.821	5.26	"	2.49	0.840	3.71
"	2.10	0.731	4.43	"	3.28	0.821	5.26	"	4.96	0.849	4.82
"	3.60	0.741	5.86	"	4.40	0.843	8.08	"	5.51	0.860	6.18
"	4.49	0.766	9.51	"	5.25	0.853	9.38	"	5.85	0.880	8.65
"	4.60	0.776	10.86	Clay	1.85	0.792	1.54	Clay	2.03	0.831	2.59
Clay	1.55	0.725	3.57	"	3.47	0.815	4.03	"	3.70	0.855	5.54
"	3.00	0.731	4.43	"	5.02	0.823	5.50	"	5.68	0.870	7.40
"	4.63	0.737	4.29	"	6.55	0.836	7.18	"	7.36	8.885	9.25
"	5.89	0.752	7.43								

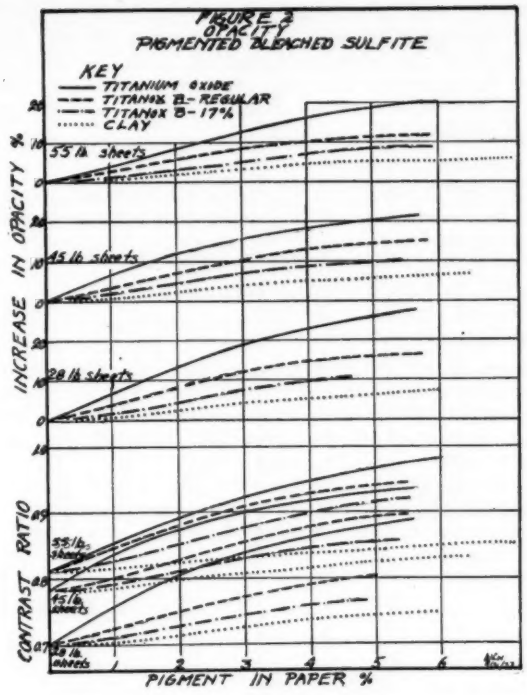
TABLE III
OPACITY—PIGMENTED ALPHA PULP

Pigment	Light Sheets 30 lbs. (24 x 36—500) Per cent in Sheet	Opacity Contrast Ratio	Per cent Increase in Opacity	Heavy Sheets 65 lbs. (25 x 38—500) Per cent in Sheet	Opacity Contrast Ratio	Per cent Increase in Opacity
Kind						
None	0	0.689	0	0	0.790	0
Titanium Oxide	2.24	0.770	11.72	2.10	0.843	6.71
"	3.17	0.780	13.20	3.59	0.873	10.51
"	3.25	0.785	13.93	4.23	0.875	10.75
"	4.18	0.790	14.64	5.38	0.894	13.15
"	5.01	0.809	17.75	5.63	0.915	15.83
"	5.04	0.810	17.85	8.67	0.970	22.80
"	8.05	0.860	24.80			
Titanox-B	1.36	0.735	6.68	2.01	0.830	5.08
"	1.92	0.748	8.55	2.31	0.833	5.42
"	2.35	0.753	9.30	3.01	0.859	8.73
"	3.23	0.776	12.61	4.04	0.868	9.88

TABLE IV
OPACITY SURFACE SIZED PAPER SIZE PIGMENTED WITH TITANIUM OXIDE

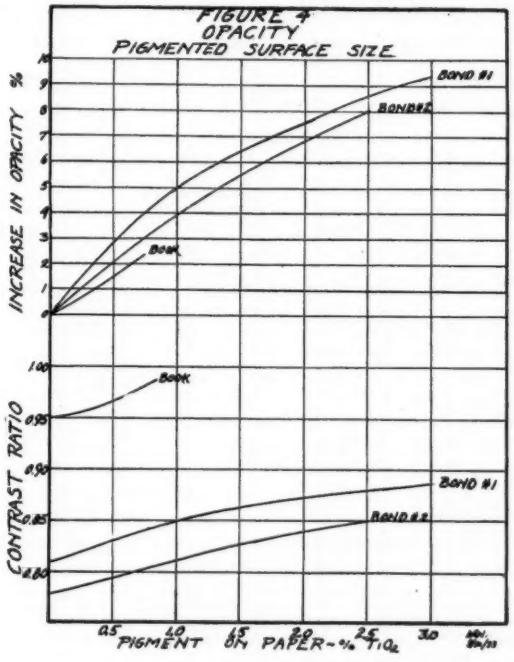
Per cent TiO_2 on sheet	Opacity Contrast Ratio	Per cent Increase in Opacity
BOND PAPER No. 1 (19 lbs. basis). No loading.		
0	0.810	0
0.436	0.830	2.47
0.440	0.835	3.09
0.885	0.848	4.69
0.960	0.849	4.82
1.22	0.850	4.93
1.29	0.853	5.31
1.44	0.858	5.92
1.58	0.859	6.05
1.65	0.870	7.40
1.81	0.871	7.56
1.95	0.872	7.55
2.09	0.875	8.03
3.01	0.885	9.26
BOND PAPER No. 2 (17 lbs. basis). No loading.		
0	0.780	0
0.70	0.800	2.56
0.85	0.805	3.21
0.94	0.808	3.59
1.05	0.810	3.83
1.10	0.812	4.12
1.10	0.815	4.48
1.21	0.820	5.12
1.58	0.825	5.75
1.86	0.827	6.01
1.98	0.830	6.42
2.01	0.830	6.42
2.19	0.838	7.42
2.38	0.842	7.95
BOOK PAPER (55 lbs. basis). 15.4 per cent Clay.		
0	0.950	0
0.43	0.955	0.53
0.55	0.960	1.05
0.67	0.975	2.63
0.70	0.976	2.73
0.81	0.980	3.15





several points lower and Titanox-B 17 per cent was still lower. Clay showed only a few points increase in opacity, and was far inferior to any of the titanium pigments. For example, it will be seen that a 28 pound sheet with a 3 per cent pure titanium oxide content was as opaque as a 55 pound sheet or a 45 pound sheet with similar contents of clay and Titanox-B 17 per cent, respectively.

Alpha pulp was pigmented with pure titanium oxide and Titanox-B regular in much the same fashion, but with longer beating. The initial opacity was lower, but the same general facts were brought out. The data are given in Table III and Fig. 3. At a 3 per cent pigment content,



the opacity was raised from about 0.69 to 0.78 for the 30 pound sheets loaded with pure titanium oxide and from 0.69 to 0.765 for Titanox-B regular. For the 65 pound sheets, the opacity at this same pigment content was raised from 0.79 to 0.87 for pure titanium oxide, and from 0.79 to 0.85 for Titanox-B regular.

SURFACE SIZED SHEETS

The opacity data for surface sized sheets are given in Table IV and Fig. 4. At a 2.5 per cent pigment content, the opacity of two bond papers was increased from 0.81 to 0.88 and 0.78 to 0.84, respectively. The opacity of a heavily loaded book paper was increased from 0.95 to 0.98 at a 0.8 per cent pigment content.

COMMERCIAL RUNS

On a grade of light tissue, the opacity of a non-pigmented sheet was 0.372, for a 2 per cent beater addition of pure titanium oxide 0.525, and for a 5 per cent beater addition, 0.625. Supposedly these were all made of the same grade of pulp, under comparable conditions. The pigment content in the case of the 2 per cent beater addition was approximately 0.88 per cent, in the case of the 5 per cent beater addition, approximately 3.06 per cent.

Of another grade of a still more transparent tissue, the opacity was increased from 0.255 to approximately 0.360 by the addition of 2 per cent pure titanium oxide to the beater.

On a 45 pound sheet of heavily loaded magazine paper, the opacity was increased from 0.904 to 0.932 by the presence of approximately 3.5 per cent pure titanium oxide in the sheet.

On a heavily loaded book paper, the opacity was raised from 0.886 to 0.897 by the presence of 1.66 per cent Titanox-B regular, and to 0.915 by the presence of 1.4 per cent pure titanium oxide.

It is evident, that particularly in commercially made papers, the opacity increase is more apparent in the lower weights.

The Commercial Evaluation of Pulp Cord-Wood*

M. A. Youtz [1] and B. E. Lauer [2]

Abstract

The purchase of pulpwood on the commonly used cord basis involves the use of a measurement which, depending on several factors, may give widely variant results for the actual quantity of wood included in the unit. To provide a positive means of comparison of different woods for the purpose of computing pulp yields and comparative wood costs there must be a means of accurately determining the quantity of wood per cord.

Any method by which the cord measure may be equated to the more definite and comparable weight basis must include a determination of the volume of wood per cord and the dry wood density per cubic foot.

These values may be determined by one or more different methods, two of which are given and the results from the different methods should check quite closely.

METHOD A

Apparatus

(1) A "standard" cord rack. This is a rack 4 feet high, 8 feet long and 4 feet deep, open at the top, front and back; strongly braced, and furnished with means whereby a string may be stretched between the tops of the end sections, at a distance of about 6 to 8 inches in front of these members.
(2) An "8 foot" cord rack. This is a rack 4 feet by 8 feet by 6 feet deep. It may consist of the rack, above, to which has been built a detachable section giving it the additional depth.
(3) An immersion tank. A square wooden tank approximately 4 feet wide by 5 feet long by 4 feet deep. It is provided with: (a) An overflow pipe, at least 4 inches in diameter, the bottom of which is within 1 foot of the top of the tank. (b) A steel or heavy wooden frame which is hinged to the back of the tank and which is used to submerge the logs in the water of the tank. There must also be included a windlass or block and tackle, to lower this frame and a counterbalance weight to lift it. (c) A means for measuring the displaced water. This may either be a tank mounted on a scale, or a stationary tank or tanks about 2 feet square which are equipped with gauge glasses and are calibrated to read in cubic feet per inch of depth. (d) A means of draining each tank.
(4) A platform scale of about 250 pounds maximum capacity.
(5) A power driven saw.
(6) A power driven hand drill.
(7) A 1-inch blank pointed ship auger.
(8) A drill brace.
(9) A 1-inch carpenter's bit.
(10) A 5-foot rule with hooked end.
(11) A steel tape marked to read average diameter from the circumference measurement.
(12) A draw knife for barking.

RECEIVED SEPTEMBER, 1933.
* To be presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Appleton, Wis., September 24-28, 1933.
[1] Member TAPPI, research director, Northern Paper Mills, Green Bay, Wis.
[2] Member TAPPI, research chemist, Northern Paper Mills, Green Bay, Wis.

Test Specimen

The specimen shall consist of not less than 2 cords nor less than 0.2 per cent of the shipment, selected at random. If the wood is unloaded by hand every fiftieth stick may be removed with care to avoid choice of large or small logs. Where a large pile is to be sampled, or the wood is handled by crane, several crane loads taken at random provide a satisfactory sample. If removed from a large pile, care should be exercised that the sample is taken at a depth of not less than several feet from the outside of the pile.

The sample for moisture determination and for technical evalutation shall be selected from the racked cord in the laboratory by marking logs which are located at points of a regular predetermined geometrical pattern. Between 15 and 20 logs selected in this manner will give a representative and unbiased sample.

Procedure

DETERMINATION OF VOLUME

The first step in the procedure is to establish a relationship between the laboratory "standard" cored and the "scaled" cord which enters the mill yard and which may or may not be similar in volume.

Wood which is shipped by railroad is scaled before being unloaded. Select a car of this at random, scale it very carefully, and unload separately from the remainder of the shipment. If the wood is in 4 feet lengths rack it into the laboratory "standard" cord rack in the following manner: Nearly fill the rack, taking care that the wood is neither too closely nor too loosely packed. Stretch the string between the two uprights and add logs until the rack is full to the string, that is, until there are logs which extend over the string to an extent which approximately balances the voids in the top layer below the string. Alternately fill and empty the rack until the last of the car of wood has been handled. Carefully level off the last portion, usually not a full cord, and note the height of the wood in the rack. At least two cars shall be so treated.

In the event that 8 feet wood is being examined, saw the entire sample into 4 feet lengths and rack as above.

The relationships between the volumes of the laboratory and scaled cords are as follows:

$$V\ S_4 = \frac{N\ L_4}{N\ S_4} \times V\ L_4$$

$$\text{and } V\ S_8 = \frac{N\ L_4}{N\ S_8} \times V\ L_8$$

Where $V\ S_4$ = Volume of 4 feet scaled cords
$V\ S_8$ = Volume of 8 feet scaled cords
$N\ S_4$ = Number of 4 feet scaled cords
$N\ S_8$ = Number of 8 feet scaled cords
$V\ L_4$ = Volume of 4 feet laboratory cords
$N\ L_4$ = Number of 4 feet laboratory cords

An alternative method for the examination of 8 feet wood consists in racking the sample in the 8 feet cord rack and sawing only a measured portion of the original sample for reracking in the 4 feet standard rack. This method, in addition to giving the ratio between the 4 feet laboratory and 8 feet scaled cords, furnishes useful data in the ratios of 8 feet racked to 8 feet scaled, and 4 feet racked to 8 feet racked cords.

The use of this method provides the following relationships:

$$V\ S_8 = \frac{N\ L_{8a}}{N\ S_8} \times \frac{N\ L_{4b}}{N\ L_{8b}} \times V\ L_4$$

Where: $N\ L_{8a}$ = Number of 8 feet laboratory cords in the car
$N\ L_{8b}$ = Number of 8 feet laboratory cords sawed for reracking.
$N\ L_{4b}$ = Number of 4 feet laboratory cords resulting from reracking
and $V\ S_8$, $N\ S_8$ and $V\ L_4$ have the same meaning as above.

Determination of Weight

Bring the sample, selected as detailed for laboratory examination, into the laboratory and rack it in the 4 feet rack. (If 8 feet wood is being examined, it is sawed in two before being racked and both ends are included in the racking in order to obtain the correct average length.) After the rack has been satisfactorily filled, lay out the geometrical pattern on the face of the cord and number the logs to be further sampled.

The pattern detailed in Fig. 1 is a convenient one for the selection of a sample of 18 logs. Patterns giving any number of logs desired for the sample may be similarly constructed.

Take a picture of the cord and retain it for future reference. Remove the logs from the rack and carefully bark them by hand. Take the following measurements: before barking, average diameter outside bark (arithmetical average of the diameters at the two ends) and weight; after barking, average diameter (as above), average length (two or more measurements,) and weight. After each quarter cord is barked and measured, place the barked logs in the immersion tank for a volume determination. To do this, first fill the immersion tank with water above the overflow outlet and permit it to drain to the overflow. Then empty the measuring tank or tanks, close the drain valves, place the logs in the immersion tank and force them under the surface of the water by means of the submerging frame in as short a time as is possible. Catch the water which is discharged from the immersion tank overflow and measure it by weight or volume in the measuring tanks.

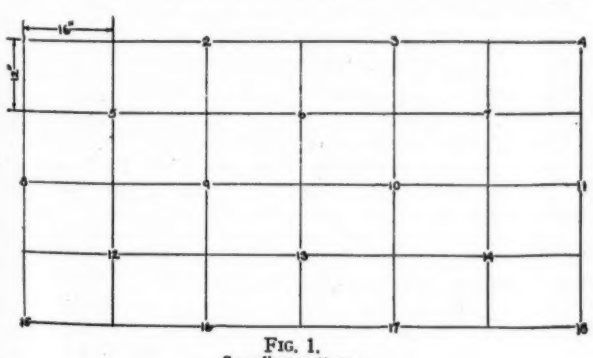


FIG. 1.
Sampling pattern.

Note: An alternative but less accurate method is available for volume determination when the immersion method is for any reason impracticable. This consists of an actual calculation of volume of each log by means of the average diameter and length measurements, and the addition of these volumes to give the total. This is somewhat inaccurate and will always give results from 2 to 4 per cent higher than by displacement, since the sticks are all varyingly irregular in shape.

Determination of Moisture

This completes the work on all the sticks except the sample logs. Assemble these and test in a group after approximately half the cord has been examined. Measure them in the same way as other logs, and immediately after the final weighing bore one or more 1 inch holes (a uniform number in each log) through the log by means of the ship auger. Quickly collect the borings and immediately place them in an airtight container (Mason jars) to await a moisture determination. These borings may be grouped to make 4 to 6 moisture determinations suffice for the group or may be used to determine the moisture of each log and the average of these taken as the average moisture content. The moisture shall be determined by drying in an air oven or by the toluene distillation method.

Calculation

Having now the volume ratio between the scaled and laboratory cord, the volume of the laboratory cord, the weight of the wood and the per cent of moisture; the density, the dry-wood density, and the pounds of dry wood and the total weight per scaled cord can be quickly and easily calculated, as follows:

$$W\ D = \frac{W\ L_4 \text{ (barked)}}{V\ L_4}$$

$$D\ W\ D = \frac{W\ L_4 \text{ (barked)}}{100\ V\ L_4} \times (100 - M)$$

$$\text{Dry wood per scaled cord} = D\ W\ D \times V\ S_8 \text{ (or } V\ S_8)$$

$$\text{Total weight per scaled cord} = \frac{W\ L_4 \text{ (rough)} \times V\ S_4 \text{ (or } V\ S_8)}{V\ L_4}$$

Where:
$W\ D$ = Wet Density
$D\ W\ D$ = Dry-Wood Density
$W\ L_4$ = Weight of Laboratory Cord
M = Per cent Moisture
and $V\ L_4$, $V\ S_4$ and $V\ S_8$ have the same meaning as above.

Report

The report of results will vary with the figures desired by the purchasing and accounting departments. The following will probably be most useful:

Volume ratio between scaled and laboratory cords. Dry wood density.

Total weight of scaled cord.

Total weight of dry wood per scaled cord.

Total volume (peeled wood) per scaled cord.

Precision

A precision of 2 to 3 per cent should be possible with this method. If the logs are exceptionally dry, a correction should be added to the volume of the wood due to absorbtion of water into the pores of the wood during the time the wood is immersed for the volume determination. This correction is approximately 1.5 per cent if wood is below 15 per cent moisture, 1 per cent for 15 to 20 per cent moisture and 0.5 per cent for 20 to 25 per cent moisture. A negative correction of 2 per cent in the dry-wood density is also necessary according to Kress and Bearce when the boring method of sampling is used, due to this method giving a lower figure for moisture content. Cord wood is seldom exactly either 4 or 8 feet in length, and in order to facilitate laboratory comparison

a correction should be applied to the volume of the laboratory cord which will give the volume had the wood been of exact length. Since the latter figure does not have a direct bearing on the wood as purchased, there is no necessity of this correction being applied to any of the values given in a report to the purchasing agencies.

An error, usually negative, in the total weight of the scaled cord is also introduced due to a change in moisture during the time which elapses between scaling and laboratory examination. Except in rare cases, this error is probably negligible when the interval is less than one or two weeks.

Limitations

The determination of volume ratio of scaled to laboratory cord is possible only when a definite and relatively small unit of wood (for example, a railroad carload) is scaled. In characterizing the wood from a large pile or from a large unit shipment, which may contain from 100 to 10,000 cords, this ratio would be practically impossible to obtain. However, the detailed examination of a standard cord in the laboratory is nearly valueless without this correlation. The ratio between 4 feet and 8 feet wood can be determined as above from any small portion of the lot. The ratio between the scaled cord and the racked (4 feet or 8 feet) cord must be determined at some intermediate point where the wood is or has been scaled and is in relatively small units, for example, at the railroad terminal before it is loaded for water shipment, or at the central collection point.

METHOD B

Apparatus

(1) An accurate railroad scale.
(2) A platform scale.
(3) A power driven saw.
(4) An immersion tank equipped as above.
(5) A power-driven hand drill.
(6) A 1-inch blank point ship auger.
(7) A hand-drill brace.
(8) A 1-inch carpenter's bit.
(9) A 5-foot rule with hooked end.
(10) A steel tape marked to read average diameter from circumference measurements.
(11) A draw knife for barking.

Test Specimen

The sample shall consist of not less than 15 sticks nor less than 0.2 per cent of the lot of wood and shall be withdrawn promiscuously from cars of wood as outlined above. Not less than 15 sticks nor 20 per cent of the sample shall constitute the portion to be sampled for moisture.

Procedure

Accurately weigh the shipment of wood, scale it very carefully and sample it immediately. If it is 8 feet wood saw the sample sticks at once. Quickly measure, bark, remeasure and sample the logs as outlined in Method A. After each quarter cord determine the volume by means of the immersion tank. After the density and per cent of bark have been determined and the total weight and number of cords has been furnished by the scaler, the volume of wood and weight per scaled cord may be easily calculated. The moisture percentage makes possible the calculation of the weight of dry-wood per scaled cord and in the shipment. The corrections noted above in Method A should be applied.

Report

Results which are of value are as follows:
Weight of wood plus bark per cord (scaled).
Weight of dry wood per cord (scaled).
Weight of dry wood per shipment.

Precision

The precision of this method should be the same if not better than that of the method A.

The application of this method is limited to units of wood which may be scaled and weighed. It is much less laborious than the other method but the nature of the procedure demands that the testing immediately follow the weighing and sampling.

Additional Information

1. Forest Products Laboratory Method No. 114: "The Determination of Volume of Solid Wood per Cord for Pulpwood as Received, Displacement Method."
2. Forest Products Laboratory Method No. 115: "Method for Recording and Evaluating the Quality of Pulpwood."
3. Evaluation of Pulpwood. (Lecture No. 11, Sulphite Course, Unpublished) by C. C. Heritage, U. S. Forest Products Laboratory.
4. The Measurement of Pulpwood and the Determination of Yields Therefrom, by Otto Kress and A. D. Bearce: Bulletin U. S. Forest Products Laboratory, Nov. 8, 1920; Paper 27, No. 14:9-10, 32 (Dec. 8, 1920); Tech. Assoc. Papers 3:42-43 (Dec., 1920); Pulp Paper Can. 18, No. 51:1271-1272 (Dec. 16, 1920).

Statistical Reports of Industries

WASHINGTON, D. C., September 20, 1933—The fact that the NRA requires certain statistical information from industries and their compliance with the request does not relieve these industries from the obligation imposed by law requiring them to make regular reports to other departments of the government.

There has been some misunderstanding in this matter among manufacturers and others who are directed by law to make reports to the Labor Department, the Department of Commerce, the Federal Trade Commission and other government agencies. Some of them have entertained the opinion that by reporting to the NRA they were relieved from continuing their reports to other departments. In order to clear up the matter the NRA today issued the following statement:

"No provision of any code relieves any industry from the obligation of continuing to make customary statistical reports to government departments."

R. E. Wilson to Address TAPPI

Robert E. Wilson, vice president in charge of research and development of the Standard Oil Company (Indiana) will be the principal luncheon speaker at the fall meeting of the Technical Association of the Pulp and Paper Industry, Appleton, Wis., September 26, 1933.

Dr. Wilson is a graduate of Wooster College, and the Massachusetts Institute of Technology. He was formerly a member of the research staff of the General Electric Company, director of the research staff and professor of chemical engineering at M. I. T.

He is well known for his work in the development of the gas mask during the War and was recently in charge of the convention of the American Chemical Society in Chicago.

TAPPI Notes

An index to the TAPPI Section of the PAPER TRADE JOURNAL for the period January to June, 1933, is now available to members on request.

John Bellows, formerly chief chemist, Parker-Young Company, is now with the Monadnock Paper Company, Bennington, N. H.

John Van Ounsem, formerly paper tester for Arthur D. Little, Inc., is now control chemist for Paper Boards, Inc., Chicago, Illinois.

Merle Wilkins, formerly chemist for the Marinette & Menominee Paper Company, Marinette, Wisconsin, is now assistant chemist at the Bryant Paper Company, Kalamazoo, Michigan.

New England TAPPI Meets at Holyoke

The 1933-34 season of the New England Section of the Technical Association of the Pulp and Paper Industry was ushered in by a well attended and enthusiastic meeting at the Nonotuck Hotel, Holyoke, Mass., Friday evening, September 15, 1933. F. C. Clark, Skinner & Sherman Inc., Boston, presided as chairman.

Hydrating Pulp for Strength Testing

The first paper was presented by Howard W. Morgan, instructor in pulp and paper manufacture at New York State College of Forestry, Syracuse, N. Y. who took as his subject, "Methods of Hydrating Pulp for Strength Testing." In this paper Mr. Morgan outlined the various theories concerning the cellulose-water relationship in beating, dealing particularly with the reports of Dr. Boyd Campbell of Forest Products Laboratories of Canada, Montreal, and G. P. Genberg of the Fraser Companies Ltd., Edmundston, N. B. He quoted Mr. Genberg as follows: "We can distinguish between two strength factors in a sheet of paper, namely, the actual fiber strength and the strength due to the cementing effect of the hydrated cellulose fiber."

Mr. Morgan described some experiments he made which showed that pulp fibers held in a water suspension for several months did not change in freeness thereby indicating that mechanical action is necessary for hydration. This was further demonstrated by the great increase in strength obtained when a similar batch of pulp was stirred at a high rate for several minutes.

Commercial beating not only changes fiber properties but results in cutting and shortening of the fibers. In preparing pulp test sheets this action is not desired but rather an action which will swell and fibrillate the pulp.

In preparing test sheets a hydrating device is desired that will have an action which is not subject to uncontrolled variables and does not vary from test to test between machines.

Because there is no tentative TAPPI standard for pulp testing relating to the use of the pebble mill, Mr. Morgan is giving particular attention to this equipment, particularly since this mill is so widely used. The controlled variables in the mill are (1) jar dimension and lining material, (2) pebble material and size, (3) amount of pebbles used, (4) weight of pulp charge, (5) volume of water used, (6) temperature of water and (7) speed of rotation of the jar. Standards will be worked out by TAPPI for each of these variables. Other variables that will require attention are: (1) hardness and surface of jar lining, (2) shape, density and hardness of pebbles and (3) method of mixing water and pulp prior to charging mill.

Dirt Removal

The second speaker was F. K. Becker of the Bird Machine Company, South Walpole, Mass., who discussed the use of screens and centrifugal separators for cleaning paper stuff. Mr. Becker outlined the history of dirt removal practice. One hundred years ago all dirt was removed by hand from the finished sheet of paper by use of a knife. In 1860 Christian Wandel of Germany invented the outward-flow type of screen but it is only in the past fifteen years that there has been any real advance in the design of such machinery.

The ability of the modern inward flow type of screen to remove dirt depends first, on its screening area (the combined length of flot times the slot width); second, on the assisting force; and third, the course of the stock through the screen; and fourth, the velocity of the stock through the stock.

The centrifugal separator, illustrated by the Centrifiner, depends for dirt removal by taking advantage of the relative specific gravity of stock and foreign particles, whereby they may be separated by centrifugal force. The important factors involved include cleaning area, velocity of stock flow, thickness of the column of liquid in the machine and the stock consistency. In good mill practice the paper machines should be preceded by a centrifugal separator, screens and auxiliary screens in the order named.

Pulp Color

The third speaker was Richard S. Hunter of the Electrical Division of the U. S. Bureau of Standards who gave a brief talk and demonstrated his new pattern mirror photometer for measuring the brightness and color of a sheet of pulp or paper as compared with a standard.

Those in Attendance

Among those who were present were the following: J. Rex Adams, Old Colony Envelope Company, Westfield, Mass.; Angelo M. Attieri, Fitchburg Paper Company, Fitchburg, Mass.; A. F. Bailey, Du Pont Company, Providence, R. I.; M. J. Baker, Franklin Paper Company, Holyoke; Philip Barnhart, Westfield River Paper Company, Russell, Mass.; H. T. Barker, Bird & Son Inc., E. Walpole, Mass.; F. K. Becker, Bird Machine Company, S. Walpole, Mass.; J. L. Blaisdell, Minor Laboratories, Springfield, Mass.; P. S. Bolton, Sturtevant Mill Company, Boston; W. G. Booth, Robert Gair Company, New London, Conn.; A. M. Brooks, Raffold Process Corporation, Andover, Mass.; J. H. Burgen, American Writing Paper Company, Holyoke; W. J. Burke, American Writing Paper Company; L. K. Burnett, Robert Gair Company, New London, Conn.; F. C. Clark, Skinner & Sherman Inc., Boston; J. A. Constance, Millers Falls Paper Company, Millers Falls, Mass.; A. F. Cosby, American Writing Paper Company; L. W. Crouse, Staley Sales Corporation, Springfield, Mass.; F. A. Curtis, American Writing Paper Company; C. W. Damon, Fitchburg Paper Company; W. E. Daulton, Fitchburg Paper Company; Charles Davidson Jr., Southworth Paper Company, W. Springfield; C. P. Dyer, Merrimac Chemical Company, Boston; William Foote, B. F. Perkins Company, Holyoke; F. C. Glanville, Crocker-McElwain Company, Holyoke; W. J. Glass, Shartle Bros. Machine Company, Middletown, Ohio; R. C. Griffin, A. D. Little Inc., Cambridge, Mass.; S. D. Hellberg, American Writing Paper Company, Holyoke; A. L. Hobday, Southworth Paper Company, W. Springfield, Mass.; M. V. Horgan, American Writing Paper Company, Holyoke; R. S. Hunter, Rosslyn, Va.; H. G. Ingraham, Bird Machine Company, S. Walpole, Mass.; H. L. Joachim, Package Paper Company, Holyoke; Andrew Jackson, American Writing Paper Company, Holyoke; W. O. Johnson, Strathmore Paper Company, Woronoco, Mass.; Lena E. Kelley, American Writing Paper Company, Holyoke; J. P. Kennedy, American Writing Paper Company; H. E. Kershaw, Deerfield Glassine Company, Monroe Bridge, Mass.; Helen U. Kiely, American Writing Paper Company; R. E. Kilty, American Writing Paper Company; G. H. Knox, Crocker-McElwain Company, Holyoke; R. W. Kumler, Bennett Inc., Wilmington, Del.; Edward Lavalle, American Writing Paper Company; H. S. Leonard, Merrimac Chemical Company, Everett, Mass.; R. G. Loomis, Case Brothers Inc., Highland Park; Conn.; R. G. Macdonald, Secretary of TAPPI, New York,

N. Y.; G. E. Mangsen, Fitchburg Paper Company, Fitchburg, Mass.; E. G. McDonnell, Fitchburg Paper Company; John McEwan, American Tissue Company, Holyoke; H. L. Mellen, Deerfield Glassine Company, Monroe Bridge, Mass.; Jessie E. Minor, Minor Laboratories, Springfield, Mass.; H. W. Morgan, New York State College of Forestry, Syracuse, N. Y.; B. R. Neice, New York Color and Chemical Company, Belleville, N. J.; F. W. Nyborn, Bird & Son Inc., E. Walpole, Mass.; F. W. O'Rourke, General Dyestuff Corporation, Boston; H. A. Otto, American Tissue Mills, S. Hadley, Mass.; G. F. Parks, Fitchburg Paper Company, Fitchburg, Mass.; Charles Prescott Jr., Bennett Inc., Cambridge, Mass.; R. J. Proctor, Fitchburg Paper Company; C. E. Quirk, New York Color and Chemical Company, Belleville, N. J.; E. O. Reed, Crane & Co., Dalton, Mass. W. P. Richardson, A. D. Little Inc., Cambridge, Mass.; Archibald Sharkey, Crane & Co., Dalton, Mass.; O. V. Simonson, Mulligan & Higgins Glue Company, New York, N. Y.; Claude Smith, American Writing Paper Company, Holyoke; L. N. Amith, American Tissue Company, Holyoke; R. M. Snell, Hurlbut Paper Company, Lee, Mass.; A. E. Southard, American Writing Paper Company, Holyoke; S. G. Stapley, Chemical Paper Company, Holyoke; L. P. Taylor, American Writing Paper Company; R. M. True, Crocker-McElwain Company, Holyoke; L. B. Tucker, Crane & Co., Dalton, Mass.; D. D. Uong, Fitchburg Paper Company, Fitchburg, Mass. F. Willemain, American Writing Paper Company; G. E. Williamson, Strathmore Paper Company, W. Springfield, Mass.; F. Williams, Crane & Co., Dalton, Mass.; I. V. Wilson, Merrimac Chemical Company, Everett, Mass. and L. M. Yoerg, American Writing Paper Company.

American Paper Mill Supplies Institute's Board Holds First Meeting

The board of directors of the American Paper Mill Supplies Institute held its first meeting in New York, Monday afternoon, and completed the formulation of definite plans for the formation of Chapters at all principal trade centers.

Samuel I. Hershman, of I. Hershman & Co., New Haven, Conn., presided. Other members of the board who were present were: Morris Kay and Charles Passannante, of Wilson Paper Stock Company, New York; Robert F. Graham, of P. H. Graham & Sons Company, Boston, Mass.; Walter H. Martens, of Geo. W. Millar & Co., Inc., New York; Alfred J. Moran, of A. J. Moran & Co., Inc., Brooklyn, N. Y.; Anthony F. Carlo, of John H. Carlo & Sons, Inc., Newark, N. J.; Andrew C. Costarino, of Hicks-Costarino Company, Inc., Brooklyn, N. Y.; Joseph P. Gaccione, of Gaccione Bros. & Co., Inc., New York; and Louis E. Meluso, of A. Meluso & Sons, Jersey City, N. J.

Mr. Graham reported on the progress made in the formation of the Massachusetts Chapter which was formed last week.

Charles J. Browne, managing director, and Stanley Osserman, counsel, outlined organization activities and submitted a complete itinerary adopted for the formation of Chapters throughout the country.

Indiana Board Co. to Dissolve

[FROM OUR REGULAR CORRESPONDENT]

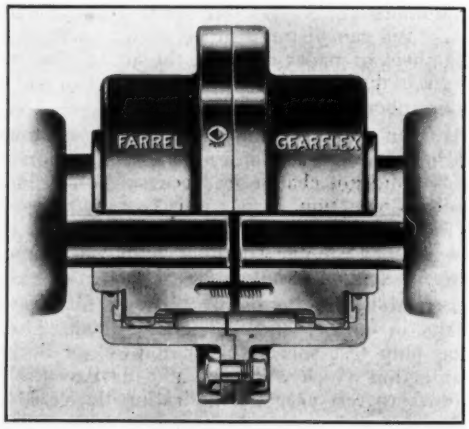
INDIANAPOLIS, Ind., September 16, 1933.—Officials of the Indiana Board and Filler Company of Vincennes, Ind., have filed papers with the secretary of state here evidencing the preliminary dissolution of the corporation.

Farrel "Gearflex" Couplings

A new flexible coupling of the gear type, known as the Farrel "Gearflex" Coupling, has recently been introduced by the Farrel-Birmingham Company, Inc., 344 Vulcan street, Buffalo, N. Y.

The double engagement type illustrated consists essentially of two externally geared hubs keyed to the two shafts to be connected and engaging an internally geared floating sleeve which encases the two hubs. With two sets of spur gears, one at each end of the floating sleeve, misalignment is compensated for by the sleeve assuming a neutral position between the two shafts. Thus, all whip or crank action is eliminated, relieving bearings and shafts of heavy pressures or vibration. The use of accurately generated external and internal spur gears, cut on the Sykes gear generating machine, insures precision and distribution of the load over a large number of contact surfaces.

The large reservoir between the hubs and the floating



GEARFLEX COUPLING

sleeve carries the supply of lubricant. When the coupling rotates, centrifugal force throws the oil to the inner surface of the floating sleeve where it spreads between the gear teeth, entirely immersing the load-carrying surfaces in a bath of oil. The load is carried by the oil film with no metal-to-metal contact between the teeth, thus providing a cushioning effect which gives a high degree of quietness in operation and reduces wear to a minimum.

The Gearflex Coupling is also made in a single engagement type which has only one externally geared hub in engagement with an internal gear in the sleeve, the other hub being solid and the sleeve bolted to it. The single engagement type is designed to provide a lower cost coupling for applications where the high speed capacity and the high degree of flexibility of the double engagement type is not required.

Both types are available in a number of standard sizes and power ratings.

Japanese Paper Production

Paper production in Japan during the month of May by the mills of the Japanese Paper Manufacturers' Association amounted to 60,424 short tons, bringing the total for the first five months of this year up to 288,534 tons as compared with 268,614 tons during the preceding year. Sales have held closely to production, May sales amounting to 58,833 tons, while those for the first five months of the current year totaled 288,041 tons.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

St. Louis, Mo.—The Hesse Envelope and Lithographing Company, 4173 North Kingshighway, is planning early call for bids for a new addition to paper converting plant, to be used primarily for storage and distributing service. It will be three-story and basement, 25 x 185 feet, estimated to cost over $30,000, with equipment. Leonard Haeger, 3844 Utah place, city, is architect, in charge. Company has recently let contract to the Gamble Construction Company, 620 Chestnut street, St. Louis, for a new transformer house for service at the plant.

Erving, Mass.—The Erving Paper Mills have taken estimates on prelimianry plans for proposed new addition to mill, previously referred to in these columns several weeks ago. It is understood that detailed plans will be drawn in the near future, when official bids on general contract will be asked. No estimate of cost of program has been announced.

Newark, N. J.—The Soda Straw Manufacturing Company has been organized with a capital of $100,000, to manufacture straw and strawboard products, as well as paper specialties. New company will take over and expand organization of same name, with local plant at 204 Morris avenue. It is headed by Karl E. Garling and associates.

Wabash, Ind.—The Container Corporation of America, Inc., 111 West Washington street, Chicago, Ill., has taken over the plant of the Wabash Coating Mills, Wabash, recently acquired, and will continue operations for the manufacture of clay-coated paperboard stocks and kindred specialties. It is proposed to advance present capacity at early date. New owner will retain the entire personnel of the Wabash company.

Emeryville, Cal.—The California Container Company, recently organized under Delaware laws, has concluded negotiations for the former local plant of the Rheem Manufacturing Company, and will take over property at once. An expansion and improvement program will be carried out, with installation of new equipment for the manufacture of paper and paperboard boxes and containers. Entire project will cost over $100,000, with machinery. Plant will be arranged to give employment to about 75 operatives. C. J. Munes is president of the new company, and G. A. Vollmer, vice-president. A. F. Knaggs will be in charge of production at the mill.

Whippany, N. J.—Frank Desiderio Sons, Inc., 262 Jefferson street, Newark, N. J., paper products, waste paper, etc., is making improvements in mill and equipment at Whippany, formerly operated by the Hanover Paper Mills and acquired by first noted company a number of weeks ago. The plant has been inactive for about three years. Machinery will be repaired and in certain instances, replaced. It is expected to resume operations at the plant by the close of the month, giving employment to more than 150 men. The Desiderio company also operates a paperboard mill at Clifton, N. J.

Phillips, Wis.—The Wisconsin Wood Products Company, Phillips, has approved plans for immediate erection of a new one-story mill on local site, about 42 x 80 feet, to be used for the manufacture of fiber specialties. It is proposed to have the plant ready for service at early date. Company is headed by Victor Gustafson, Rib Lake, Wisconsin.

F. W. Norris Joins Pejepscot Paper Co.

Arthur Schroeder, sales manager of the Pejepscot Paper Company, Inc., with offices at 42 Broadway, New York, and mills at Lisbon Falls, Pejebscot Mills and Brunswick, Me., announces that F. W. Norris, Jr., joined their sales organization on August 1. Mr. Norris was formerly with the Manufacturers Paper Company and is well known in the paper trade.

Riverside Credit Union Formed

Employees of the Riverside Paper Corporation, Appleton, Wis., have organized the Riverside Credit Union, under the banking laws of Wisconsin. The capital stock is to be sold at $5 a share. The organization will promote thrift among its members and provide a source of small loans at lenient interest rates. A number of the Wisconsin mills now have credit unions operating.

OFFICIALS AND SOME OF THE EMPLOYEES OF THE ASTEN-HILL MFG. CO., ON THE OCCASION OF THE RAISING OF THE NRA FLAG OVER THEIR PLANT IN PHILADELPHIA.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

CIGARETTE PAPER

Champagne Paper Corp., Champlain, Havre, 630 cs.; Standard Products Corp., Champlain, Havre, 65 cs.; American Tobacco Co., Pr. Roosevelt, Havre, 450 cs.; De Manduit Paper Corp., Pr. Roosevelt, Havre, 145 cs.

WALL PAPER

F. J. Emmerich, Hamburg, Hamburg, 2 bls.; W. J. Byrnes, Bremen, Bremen, 1 cs.

NEWS PRINT

W. H. Bell, Markland, Liverpool, N. S., 6411 rolls; Perkins Goodwin & Co., St. Louis, Hamburg, 487 rolls; Clinton Paper Co., St. Louis, Hamburg, 16 rolls; Jay Madden Corp., Scanstates, Wiborg, 415 rolls; Jay Madden Corp., Pr. Roosevelt, Hamburg, 130 rolls.

PRINTING PAPER

E. Dietzgen & Co., Rotterdam, Rotterdam, 10 cs.; Ozalid Corp., Rotterdam, Rotterdam, 25 cs.; International F'd'g. Co., Black Heron, Rotterdam, 15 cs.; Walker Goulard Plehn Co., Hamburg, Hamburg, 66 bls.; Senefelder Co. Inc., Hamburg, Hamburg, 8 cs.

WRAPPING PAPER

F. C. Strype, Minnetonka, Antwerp, 8 cs.; E. Dietzgen & Co., Rotterdam, Rotterdam, 18 cs.

PACKING PAPER

A. A. Stein, Champlain, Havre, 10 cs.; F. C. Strype, Pr. Roosevelt, Hamburg, 2 cs.

FILTER MASS

P. H. Petry & Co., Hamburg, Hamburg, 100 bls.

FILTER PULP

Independent F'd'g. Co., Pr. Roosevelt, Hamburg, 20 bls.

FILTER PAPER

H. Reeve Angel & Co. Inc., American Banker, London, 7 cs.; H. Reeve Angel & Co. Inc., Majestic, Southampton, 1 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., American Banker, London, 3 cs.

DECALCOMANIAS

L. A. Consmiller, Hamburg, Hamburg, 5 cs.; Sellers Transportation Co., Hamburg, Hamburg, 8 cs.; Sellers Transportation Co., Bremen, Bremen, 22 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Minnetonka, Antwerp, 63 cs.; Globe Shipping Co., Berlin, Bremen, 20 crates.

METAL COATED PAPER

Taub Hummell & Schnall, Hamburg, Hamburg, 1 cs.

PHOTO PAPER

J. J. Gavin, Majestic, Southampton, 5 cs.

COVER PAPER

International F'd'g. Co., Hamburg, Hamburg, 2 cs.

COATED PAPER

Chas. Happel, Hamburg, Hamburg, 10 cs.; Chas. Happel, Pr. Roosevelt, Hamburg, 4 cs.

TISSUE PAPER

O. Hommell Co., Scythia, Liverpool, 7 cs.; W. J. Byrnes, Majestic, Southampton, 2 cs.; Jay Madden Corp., Hamburg, Hamburg, 17 rolls.

PAPER BOARD

Colmar Paper Corp., Minnetonka, Antwerp, 5 cs.

PASTE BOARD

International F'd'g. Co., Berlin, Bremen, 55 cs.

MISCELLANEOUS PAPER

Japan Paper Co., Kinai Maru, Kobe, 4 cs.; Corn Exchange Bank Trust Co., Kinai Maru, Osaka, 19 cs.; T. N. Fairbanks Co., Kinai Maru, Yokohama, 2 cs.; M. M. Cohen, Kungsholm, Gothenburg, 24 bls.; H. Reeve Angel & Co. Inc., Kungsholm, Gothenburg, 94 bls.; The Boregaard Co. Inc., Kungsholm, Gothenburg, 358 rolls; Kraemer & Co., Kungsholm, Gothenburg, 186 bls.; Globe Shipping Co., Rotterdam, Rotterdam, 5 cs.; F. C. Strype, Pr. Pierce, Genoa, 1 cs.; Japan Paper Co., G. Maersk, Kobe, 21 cs.; Keller Dorian Paper Co., Champlain, Havre, 8 cs.; Favor Ruhl & Co., Champlain, Havre, 3 cs.; C. Schleicher & Schull Co., Hamburg, Hamburg, 10 cs., 4 bls.; Atlantic F'd'g. Co., Hamburg, Hamburg, 26 cs.; Keuffel & Esser Co., Pr. Roosevelt, Hamburg, 51 cs.

RAGS, BAGGINGS, ETC.

C. H. Powell Co., Rotterdam, Rotterdam, 67 bls. cotton waste; E. J. Keller Co. Inc., Rotterdam, ———, 106 bls. bagging; E. J. Keller Co. Inc., Black Falcon, ———, 145 bls. bagging; E. J. Keller Co. Inc., Black Falcon, ———, 253 bls. rags; Whaling Waste Products Co., Black Falcon, Antwerp, 300 bls. jute card waste; ———, Black Falcon, Antwerp, 115 bls. cotton waste; ———, Giulia, Trieste, 56 bls. rags; Banco Coml Italiane Trust Co., Berlin, Bremen, 310 bls. bagging; Royal Manfg. Co., G. Maersk, Kobe, 100 bls. thread waste; M. Snedeker Corp., Scythia, Liverpool, 149 bls. paper stock; Chase National Bank, American Banker, London, 14 bls. felt waste; E. J. Keller Co. Inc., St. Louis, ———, 40 bls. rags; Manufacturers Trust Co., Cypria, Barcelona, 181 bls. rags; Manufacturers Trust Co., Cypria, Barcelona, 65 bls. bagging; Chase National Bank, Cypria, Barcelona, 61 bls. rags; ———, Cypria, Valencia, 316 bls. rags; E. J. Keller Co. Inc., Cypria, ———, 138 bls. bagging; E. J. Keller Co. Inc., Cypria, ———, 289 bls. rags; Amtorg Trading Corp.,

Scanstates, Leningrad, 1396 bls. rags; Irving Trust Co., Collamer, Havre, 95 bls. new cuttings; Irving Trust Co., Hamburg, Hamburg, 17 bls. rags; E. J. Keller Co. Inc., Gen. von Steuben, ———, 74 bls. rags; E. J. Keller Co. Inc., L. A. Christensen, ———, 350 bls. rags; E. J. Keller Co. Inc., L. A. Christensen, ———, 68 bls. bagging; E. J. Keller Co. Inc., Exeter, ———, 90 bls. rags; E. J. Keller Co. Inc., Capulin, ———, 114 bls. bagging.

GLUE STOCK

———, Hamburg, Hamburg, 286 bags bone glue; ———, Hamburg, Hamburg, 115 bags hide glue.

OLD ROPE

Banco Coml Italiane Trust Co., Giulia, Trieste, 53 coils; Banco Coml Italiane Trust Co., G. Maersk, Kobe, 60 bls.; S. Birkenstein & Son, Cypria, Barcelona, 52 coils; Banco Coml Italiane Trust Co., Pr. Roosevelt, Hamburg, 35 coils; E. J. Keller Co. Inc., Manhattan, ———, 58 coils.

CHINA CLAY

Whitaker Clark & Daniels, Scythia, Liverpool, 280 bags; L. A. Salomon & Bro., Scythia, Liverpool, 807 bags, 55 casks.

CASEIN

National City Bank, Champlain, Havre, 401 bags; Guaranty Trust Co., Collamer, Havre, 334 bags, 25050 kilos; D. C. Andrews & Co., Hamburg, Hamburg, 70 bags.

WOOD PULP

Johaneson Wales & Sparre, Inc., Kungsholm, Gothenburg, 402 bls. sulphite; J. Andersen & Co., Kungsholm, Gothenburg, 625 bls. sulphite; M. Sone, Kungsholm, Gothenburg, 2091 bls. wood pulp; E. M. Sergant & Co., Kungsholm, Gothenburg, 200 bls. sulphite; Gottesman & Co. Inc., Kungsholm, Gothenburg, 1800 bls. sulphate; M. Sone, Giulia, Trieste, 1000 bls. wood pulp; J. Andersen & Co., United States, Oslo, 600 bls. wood pulp; The Borregaard Co. Inc., United States, Oslo, 168 bls. wood pulp, 28 tons; Atterbury Bros. Inc., United States, Oslo, 660 bls. wood pulp, 111 tons; Atterbury Bros. Inc., United States, Oslo, 150 bls. sulphite, 25 tons; E. M. Sergeant & Co., United States, Oslo, 600 bls. chemical pulp, 101 tons; Castle & Overton, Inc., Scanstates, Wiborg, 2023 bls. wood pulp, 444 tons; Castle & Overton, Inc., Hamburg, Hamburg, 415 bls. wood pulp, 83 tons; E. J. Keller Co. Inc., Hofuku Maru, ———, 324 bls. wood pulp, 49 tons; Bulkley Dunton & Co., Vigor, ———, 375 bls. wood pulp.

ALBANY IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Acer & Co., Nordpol, Port Alice, 4940 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

G. F. Malcolm Inc., Scythia, Liverpool, 37 cs. tissue paper; F. S. Webster & Co. Inc., Scythia, Liverpool, 18 cs. tissue paper; Bank of New York Trust Co., American Banker, London, 293 bls. waste paper; 1st Natl. Bank of Boston, American Banker, London, 268 bls. waste paper; Crocker Burbank Co., American Banker, London, 197 bls. waste paper; Chase National Bank, American Banker, London, 41 bls. rags; ———, American Banker, London, 46 bls. rags; Bulkley Dunton & Co., Wido, ———, 800 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Gottesman & Co., Inc., Erik Frisell, Sweden, 11,100 bls. wood pulp; Gottesman & Co. Inc., Heddernheim, Sweden, 16550 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

———, Giulia, Trieste, 1806 bls. rags; Union Waste Co., G. Maersk, Kobe, 265 bls. cotton waste; Union Waste Co., G. Maersk, Kobe, 25 bls. rags; Philadelphia Natl. Bank, G. Maersk, Kobe, 250 bls. cotton waste; Philadelphia Natl. Bank, G. Maersk, Kobe, 115 bls. rags; Chase National Bank, G. Maersk, Kobe, 90 bls. dark cottons; Chase National Bank, G. Maersk, Kobe, 80 bls. rags; Chase National Bank, G. Maersk, Kobe, 800 bls. bagging; D. Galloway, G. Maersk, Kobe, 50 bls. cotton waste; Corn Exchange Bank Trust Co., Binnendyk, Rotterdam, 43 bls. ivory boards; ———, Binnendyk, Rotterdam, 32 bls. rags; Philadelphia National Bank, Binnendyk, Rotterdam, 280 bls. rags; J. W. Hampton Jr. & Co., Scanstates, Wiborg, 76 rolls news print; Lagerloef Trading Co., Scanstates, Wiborg, 3813 bls. sulphite, 726 tons; Continental Bank Trust Co., Scanstates, Stettin, 59 bls. rags; Castle & Overton, Inc., Collamer, Havre, 32 bls. rags; E. Mayer, Collamer, Havre, 88 bls. rags; Darmstadt Scott & Courtney, Collamer, Dunkirk, 114 bls. rags; E. Mayer, Wido, Hamburg, 107 bls. rags; Castle & Overton, Inc., Wido, Hamburg, 690 bls. wood pulp; ———, Wido, Hamburg, 94 bls. rags; ———, Wido, Hamburg, 40 rolls news print; M. Sone, Wido, Bremen, 600 bls. wood pulp; E. J. Keller Co. Inc., Blankaholm, ———, 246 bls. rags; Gottesman & Co. Inc., Blankaholm, Sweden, 290 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Castle & Overton, Inc., Scanstates, Wiborg, 905 bls. wood pulp, 18 tons.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

———, G. Maersk, Kobe, 700 bls. rags; National City Bank, Binnendyk, Rotterdam, 487 bls. rags; National City Bank, Binnendyk, Rotterdam, 122 bls. bagging; Castle & Overton, Inc., Binnendyk, Rotterdam, 867 bls. wood pulp; Brown Bros. Harriman & Co., Binnendyk, Rotterdam, 62 coils old rope; ———, Binnendyk, Rotterdam, 97 bls. cotton waste; M. Sone, Blankaholm, Gothenburg, 300 bls. wood pulp; Gottesman & Co. Inc., Wanja, Sweden, 4844 bls. wood pulp; Parsons & Whittemore, Inc., City of Newport News, ———, 1000 bls. sulphite.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

N. Y. Trust Co., G. Maersk, Kobe, 50 bls. cotton waste; D. Galloway, G. Maersk, Kobe, 50 bls. cotton waste; Chase National Bank, G. Maersk, Kobe, 100 bls. bagging.

SAVANNAH IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

———, G. Maersk, Kobe, 400 bls. bagging.

NEWPORT NEWS IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Gottesman & Co. Inc., Sturcholm, Sweden, 3580 bls wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Gottesman & Co. Inc., Lagaholm, Sweden, 600 bls. wood pulp.

HOUSTON IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Darmstadt Scott & Courtney, Giulia, Trieste, 262 bls. bagging.

GALVESTON IMPORTS

WEEK ENDING SEPTEMBER 16, 1933

Parsons & Whittemore, Inc., Lagaholm, ——, 240 bls. mechanical pulp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 20, 1933.

Conditions in the local paper market are practically unchanged. While demand for the various standard grades of paper is rather quiet at present, trading should become livelier in the near future. Sales forces of the large paper organizations continue optimistic. Prices are generally well maintained.

The news print paper market is steadier. According to statistics gathered by the News Print Service Bureau, the total North American production of news print for the month of August amounted to 305,242 tons. Stocks at the Canadian and United States mills at the end of August totalled 63,233 tons.

Production of paper board is proceeding in sufficient volume to take care of current requirements. Box board is in seasonal request. Demand for various grades of fine paper is fairly persistent. Tissues are moving in good volume. The coarse paper market is sharing the general improvement.

Mechanical Pulp

The ground wood pulp market is firmer. Offerings are limited and the industry is in a strong position. No. 1 imported moist mechanical pulp is now quoted at from $27.50 to $29.00 and dry at from $28.00 to $29.50 per ton, on dock, Atlantic ports. Domestic and Canadian ground wood pulp are steady.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Demand for the various grades is moderately active. Imported easy bleaching sulphite pulp is firmer and is now quoted at from $2.00 to $2.15 per 100 pounds, on dock, Atlantic ports. All other grades of foreign and domestic chemical pulp remain unchanged.

Old Rope and Bagging

Some improvement was noticed in the old rope market. Offerings of imported and domestic old manila rope are rather limited. Small mixed rope is moving in good volume. The bagging market is firmer. Gunny and scrap bagging are in better demand. Roofing bagging is steadier.

Rags

The domestic rag market is practically marking time. Paper mill request for new cotton rags is fairly persistent. No. 1 white shirt cuttings are now quoted at from $6.50 to $7.00. Roofing grades are arousing more interest. The imported rag market is irregular. Dark cottons are slightly easier.

Waste Paper

While board mill demand for the lower grades of paper stock is excellent, prices are decidedly softer. Strictly folded news is now selling at from .70 to .75 and No. 1 mixed paper is offered at from .55 to .65 f.o.b. New York. The higher grades of waste paper are steady, including shavings, book stock, etc.

Twine

Trading in the local twine market is fairly active. Supplies are moving into consumption in satisfactory volume for the season. Offerings are sufficient to meet current demands. Prices are generally well sustained and despite keen competition reports of concessions are infrequent.

Parker Young Receivership

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 18, 1933.—In connection with the receivership of the Parker Young Company of Lincoln, N. H., whose main offices are in this city, outstanding bonds amounting to some $1,500,000 bearing interest at 6½ per cent and a first mortgage on the property brought about the conditions. When bond interest was defaulted, the Atlantic National Bank of Boston, a trustee of the mortgage, moved for receivership. Action was taken by the First National Bank of Boston which took over the liability for deposits in the Atlantic some time ago. The company has been paying merchandise creditors promptly and discounting recent bills. The receivership is a step in foreclosure proceedings which will probably mean a reorganization and a reducing of the funded debt in some form eventually. Sales of the company's products are increasing, especially in some of the later sulphite bonds.

Wood Pulp Production

The Bureau of the Census announces that, according to a preliminary tabulation of data collected at the annual census of Forest Products taken in 1933, the total quantity of pulpwood consumed by 169 pulp mills in 1932 was 6,233,085 cords, a decrease of 13.3 per cent as compared with 6,033,312 cords consumed by the same mills in 1931. The production of wood pulp by these mills in 1932 amounted to 3,487,493 tons, a decrease of 13.4 per cent as compared with 4,027,053 tons in 1931. These 169 mills accounted for 89.7 per cent of the total consumption of pulpwood and produced 91.3 per cent of the total output of wood pulp in the United States in 1931. Assuming their proportionate consumption and production to have been approximately the same in 1932 as in 1931, an aggregate consumption of about 5,934,000 cords of pulpwood and an aggregate production of about 3,820,000 tons of wood pulp during that year are indicated. The corresponding totals for 1931 were 6,722,766 cords of pulpwood and 4,409,344 tons of wood pulp, respectively.

Paper Salesmen Resume Weekly Luncheons

The Eastern Division of the Salesmen's Association of the Paper Industry resumed its regular weekly luncheons and meetings on Monday last at the Hotel Woodstock, New York. The new Paper Code, trade customs and practices, and other vital problems of the industry, were freely discussed by those present.

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

CANTON, MASS.

Woolen manufacturers since 1856

PMC
SUPERIOR CHEMICALS

SUPERIOR
ROSIN SIZE
SATIN WHITE
INDUSTRIAL CHEMICALS

Experience has taught users of paper-making chemicals that P. M. C. products are uniform and reliable. These qualities are insured by quantity production, by control of raw materials, and by specializing in the manufacture of chemicals for the paper manufacturer.

PMC

PAPER MAKERS CHEMICAL CORPORATION
KALAMAZOO, MICHIGAN
PLANTS IN ALL LARGE PAPER-MAKING AREAS P.M.-10R

GEORGE F. HARDY

Consulting Engineer

305-309 Broadway, New York City, N. Y.

Member—Am. Soc. C.E.—Am. Soc. M.E.—Eng. Inst. Can.

Consultation	Paper and Pulp Mills
Reports	Hydro-Electric and
Valuations	Steam Power Plants
Estimates	Plans and Specifications

Hardy S. Ferguson & Co.

Consulting Engineers

200 Fifth Avenue, New York City

Hardy S. Ferguson.....Member A.S.C.E., A.S.M.E., E.I.C.
Moses H. Teaze .....Member A.S.M.E., E.I.C., A.S.C.E.
J. Wallace Tower .....Member A.S.C.E., A.S.M.E.

Consultation, reports, valuations, and complete designs and engineering supervision for the construction and equipment of

Pulp and Paper Mills and other Industrial Plants.
Steam and Hydro-electric Power Plants
Dams and other Hydraulic Structures.

PERMANENT COLORS

Browns Greens Reds Yellows

BROWNS
Oxides of Iron
Turkey Umbers

GREENS
Chromic Oxides
Guignet's Green

REDS
All types and shades of Oxides of Iron

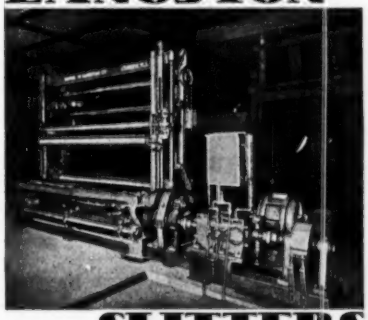
YELLOWS
Ochres
Iron Hydroxides

Asbestines and Talcs for Fillers

C. K. WILLIAMS & CO.

EASTON, PA.

LANGSTON



SLITTERS

The heavy-duty Langston Slitter can be had in any width, to wind any diameter. Use it as a winder or as a rewinder. Speed up to 3000 feet per minute. Makes rolls of uniform density, square-edged. Langston's Shear-Cut makes no dust—the paper is *clean-cut*, not ground apart. A catalog is yours for the asking.

SAMUEL M. LANGSTON CO., Camden, N. J.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 20, 1933.

BLANC FIXE.—Some improvement is noticed in the demand for blanc fixe. Prices are firmer than for some time past. The powder is quoted at from 3½ to 3¾ cents per pound, in barrels, at works; while the pulp is quoted at from $42.50 to $45 per ton, in bulk.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Contract shipments are moving at a fairly steady pace. Prices are holding to schedule. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues easy. Domestic standard ground is quoted at 14 cents and finely ground at 15 cents per pound. Argentine standard ground is selling at 13¾ cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Prices are well sustained. Solid caustic soda is quoted at from $2.55 to $3.00; while the flake and the ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is fairly active. Contract shipments are going forward with regularity. Imported china clay is still quoted at from $12 to $17 per ton, ship side; while domestic paper making clay is selling at from $4.50 to $12 per ton, at mine.

CHLORINE.—Trading in the chlorine market is moderately active. The contract movement is well up to average. Prices are holding to formerly quoted levels. Chlorine is selling at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is slightly firmer. Grades of gum rosin used in the paper mills are quoted at from $5 to $5.05 per 280 pounds, in barrels, at works; while wood rosin is selling at $3.90 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Conditions in the salt cake market are satisfactory. Prices continue firm. Salt cake is quoted at from $14 to $14.50; chrome salt cake at from $13.50 to $14 per ton, at works; while foreign salt cake is selling at from $14 to $14.50 per ton, on dock.

SODA ASH.—The soda ash market continues to display strength. Shipments against contract are moving at a steady pace. Prices remain unchanged. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—While the starch market is rather quiet, the industry is in a sound position. The contract movement is normal for the season. Special paper making starch is quoted at $2.84 per 100 pounds, in bags; and at $3.11 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is marking time at present. Prices are holding to schedule. Commercial grades are quoted at from $1.25 to $1.46; while iron free is still selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Most of the business transacted in the talc market during the past week was along routine lines. Domestic talc is still quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $20 to $50 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Bonds (Cases)—			
S. & S. C.	5.50	@	—
S. & S. C. Litho.	5.75	@	—
M. F.	5.25	@	—
Coated and Enamel	6.15	@	9.30
Coated Litho	6.90	@	—
Tissues—Per Ream—			
White No. 1	.60	@	.80
White No. 2	.55	@	.70
Anti-Tarnish M. G. only	.75	@	.80
Colored	.80	@	1.00
Kraft	.75	@	.80
Manila	.65	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.11	@	—
No. 2	.10	@	—
Bleached, basis 20 lbs.	.13	@	—

(Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Side Runs	25.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.62½	@	4.00
Southern	3.62½	@	4.00
Imported	Nominal		
Boards—per ton—			
News	45.00	@	50.00
Chip	42.50	@	47.50
Binders Boards	68.00	@	72.00
Kraft Liner	75.00	@	85.00
Standard 85 Test			
Jute Liner	50.00	@	55.00
Sgl. Mla. Ll. Chip	52.50	@	55.00

(F. o. b. Mill)

Wood Pulp Board	70.00	@	80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	27.50	@	29.00
Dry	28.00	@	29.50

(F.o.b. Mill)

No. 1 Domestic and Canadian	24.00	@	28.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	2.70	@	3.00
Easy Bleaching	2.00	@	2.15
No. 1 strong unbleached	1.90	@	2.00
Mitscherlich Unbleached	1.95	@	2.00
No. 2 Strong unbleached	1.75	@	1.85
No. 1 Kraft	1.75	@	1.85
No. 2 Kraft	1.60	@	1.70
Sulphate—			
Bleached	2.75	@	3.25

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	2.50	@	3.75
Easy Bleaching	1.80	@	1.90
News	1.70	@	1.80
Mitscherlich unbleached	2.25	@	2.50
Kraft (Domestic)	1.60	@	2.75
Soda Bleached	2.50	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.25	@	4.50
Fancy	2.50	@	2.75
Washables	2.00	@	2.25
Mixed Khaki Cuttings	3.25	@	3.50
O. D. Khaki Cuttings	4.00	@	4.25
Men's Corduroy	1.50	@	[illegible]
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.50
White, No. 2—			
Repacked	2.00	@	2.50
Miscellaneous	1.75	@	2.00
Thirds and Blues—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	.90	@	.95
No. 2	.80	@	.85
No. 3	.75	@	.80
No. 4	.70	@	.75
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	1.50	@	1.60
New Mixed Cuttings	1.60	@	1.70
New Light Silesias	3.50	@	3.75
Light Flannelettes	3.25	@	3.50
Unbleached Cuttings	5.75	@	6.00
New White Cuttings	5.50	@	6.00
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.00	@	7.50
No. 2 White Linens	6.00	@	6.50
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	3.75	@	4.00
No. 2 White Cotton	3.00	@	3.25
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.50	@	1.60
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.65	@	1.80
French Blue Linens	2.10	@	2.25
German Blue Linens	1.85	@	2.00
German Blue Cottons	1.35	@	1.50
Checks and Blues	1.30	@	1.40
Lindsay Garments	1.10	@	1.15
Dark Cottons	.90	@	.95
Old Shopperies	.85	@	.90
New Shopperies	.80	@	.85
French Blues	1.50	@	1.65

Old Rope and Bagging

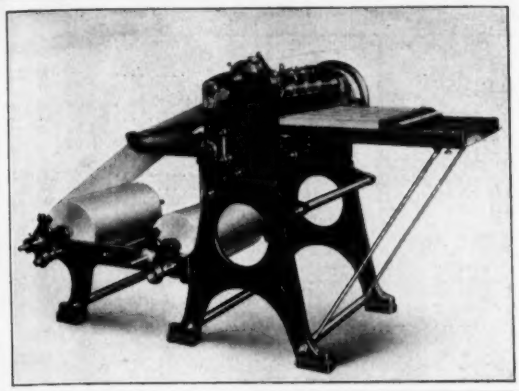
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.30	@	1.40
Domestic	1.25	@	1.35
Wool Tares, light	1.05	@	1.15
Wool Tares, heavy	1.05	@	1.15
Bright Bagging	1.00	@	1.10
Manila Rope—			
Foreign	2.50	@	2.75
Domestic	2.50	@	2.75
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	1.50	@	1.75
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.65	@	2.85
Ordinary Hard White No. 1	2.40	@	2.50
Hard White No. 2	2.30	@	2.40
Soft White No. 1	2.30	@	2.40
Flat Stock—			
Stitchless	1.05	@	1.15
Overissue Mag.	1.05	@	1.15
Solid Flat Book	.95	@	1.05
Crumpled No. 1	.85	@	.90
Solid Book Ledger	1.50	@	1.75
Ledger Stock	1.05	@	1.15
New B. B. Chips	.65	@	.70
Manilas—			
New Env. Cut	1.65	@	1.75
New Cuttings	1.20	@	1.25
Extra No. 1 old	.90	@	1.00
Print	Nominal		
Bogus Wrapper	.70	@	.85
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.20	@	1.30
News—			
No. 1 White News	1.20	@	1.30
Strictly Overissue	.75	@	.85
Strictly Folded	.70	@	.75
No. 1 Mixed Paper	.55	@	.65



"SPOERL" DISTRIBUTOR

For Interfolding Toilet Paper

Latest construction delivering finished packages without stoppage.

"Spoerl Paper Napkin Machine". High speed, high class work, simplified handling. This machine embodies several new features.

Toilet paper slitting, rewinding and labeling machine.

PADGETT & RICHMAN

Selling Agents

100 Hudson Street New York, N. Y.

Dietz Towel Interfolding Machines
also

TOILET PAPER MACHINES

For making Toilet and Paper Towel Rolls
(With or without perforations)

AUTOMATIC TUBE MACHINES

For Making Wire-Stitched Toilet Tubes

Sanitary Crepe Towel Machines, Roll Tighteners, Slitting and Rewinding Machines, Drop Roll Slitting Machines, Photo Mount Beveling Machines, Rotary Card Cutting Machines, etc.
Correspondence solicited

DIETZ MACHINE WORKS

126-128 W. Fontaine Street
Cor. Waterloo St. (between Front & Second Sts.)
and below Diamond St.
Phila., Penna., U. S. A.

CASEIN

CASEIN-CO A BORDEN PRODUCT BRAND

Uniform Quality Dependable Service

THE CASEIN MFG. COMPANY OF AMERICA, Inc.

205 E. 42nd St. New York, N. Y.

Oldest and Largest Producers of Casein in America

DETECTIVE SERVICE

Any domestic, business or financial trouble quickly and confidentially investigated everywhere by our expert secret service. Moderate rates. For quick action, write, 'phone or call

Universal Detective Bureau

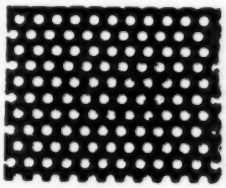
251 W. 42nd St., New York

'Phone Wisconsin 7-6346

Perforated Metal Screens

For Pulp and Paper Mills

STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.



".065" Round

CHARLES MUNDT & SONS

63-65 FAIRMONT AVE. JERSEY CITY, N. J.

TRIMBEY MACHINE WORKS

GLENS FALLS, N. Y.

Manufacturers of

WEIGHT REGULATORS
CONSISTENCY REGULATORS
PROPORTIONING AND METERING SYSTEMS
PULP SCREENS—FLOAT VALVES

PAPER MAKERS IMPORTING CO. INC. EASTON, PENNSYLVANIA, U.S.A.

FINEST PAPER CLAYS

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.13¼	@	.14¾
3-ply	.14¼	@	.14¾
2-ply	.15¼	@	.15¾
Paper Makers Twine	.08¾	@	.10¾
Box Twine, 2-3 ply	.12¼	@	.13½
White Hemp	.12¼	@	.15¼
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13¼	@	.15½
No. 2	.11¼	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¼	@	.07¼
No. 2 S.&S.C. Book	.05¼	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¼	@	.04¾
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.07	@	.07¾
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	—
Solid News	43.50	@	—
Manila Lined Chip	47.50	@	—
Patent coated	55.00	@	—
Container Lined—			
85 Test	60.00	@	65.00
100 Test	60.00	@	70.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	1.80
No. 1 Hard White	1.40	@	1.50
No. 1 Soft White	1.20	@	1.30
Ledger & Writings	.80	@	.90
Solid Books	.80	@	.90
Blanks	1.00	@	1.05
Krafts	.90	@	1.00
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	1.00	@	1.05
Print Manila	.60	@	.65
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.55
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½
(Delivered Philadelphia)			
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	37.00	@	45.00
Chip Board	40.00	@	45.00
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.03
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.15
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.15	@	1.25
No. 1 Mixed	.95	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.20	@	1.25
No. 1 Books, heavy	1.20	@	1.25
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	1.65	@	1.75
No. 1 Old Manila	.95	@	1.00
Print Manila	.90	@	.95
Container Manila	.85	@	.90
Old Kraft	1.20	@	1.25
Common Paper	.60	@	.70
No. 1 Mixed Paper	.75	@	.80
Straw Board Chip	.70	@	.75
Binders Board Chip	.70	@	.75
Corrugated Board	.90	@	.95
Overissue News	.70	@	.80
Old Newspaper	.70	@	.80

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.42½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No. 2	.03¼	@	.04½
No. 1 Kraft	.04½	@	—
No. 2 Kraft	.03½	@	—
(F. o. b. Boston)			
Southern Kraft	.03½	@	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¼
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls.009	—	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	45.00	@	50.00
Chip Board	42.50	@	47.00
Chip Board (Creasing)	45.00	@	—
Single Manila Lined Chip	52.50	@	62.50
Single White, Patent Coated News Board—			
Bender	62.50	@	72.50
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.90	@	2.00
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.40	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	1.00	@	1.10
No. 1 Books, heavy	1.10	@	1.20
No. 1 Books, light	.80	@	1.00
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	1.00	@	1.10
White Blank News	1.20	@	1.30
No. 1 Kraft	1.05	@	1.10
Manila	.90	@	1.05
No. 1 Mixed Papers	.55	@	.60
Print Manila	.87½	@	.92½
Overissue News	.80	@	.90
Old Newspapers	.75	@	.80
Box Board Chips	.55	@	.65
Corrugated Boxes	.70	@	.77½
Screening wrappers	.75	@	.85

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	2.35
Domestic	2.50	@	—
Transmission Rope	1.50	@	—
Mixed Strings	.85	@	—
Jute Rope	1.00	@	1.15
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.25	@	1.30
Domestic	1.20	@	1.25
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.00	@	1.10
No. 1 Scrap Burlap	1.20	@	1.25
Scrap Sisal	1.10	@	1.15
Scrap Sisal for shredding	1.15	@	1.30
Wool Tares, heavy	1.10	@	1.25
New Burlap Cutting	.95	@	1.00
Australian Wool Pouches	2.50	@	—
Heavy Baling Bagging	1.50	@	1.75
Paper Mill Bagging	.85	@	.95
Bagging No. 2	.50	@	.60
No. 1 Burlap	1.75	@	2.25

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02¼
New White No. 1	.05½	@	.06
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02¼	@	.03
New Unbleached	.06	@	—
Fancy	—	@	.02¼
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¼
New Black, soft	.04	@	.04¼
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.03	@	.03¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	.05	@	.05½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	—
White No. 2—			
Repacked	.01½	@	.01¾
Miscellaneous	.01½	@	.01¾
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock—			
No. 1	.70	@	.75
No. 2	.55	@	.65
No. 3	.35	@	.45

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.75	@	.85
New White Shirt Cuttings	5.50	@	6.50
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.25	@	1.55
Old Linsey Garments	1.05	@	1.25

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.08	@	—
No. 1 Colored	.10¾	@	—
No. 2 Colored	.08½	@	.10¾
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.10
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.50
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.55	@	.80
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	1.00	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.05¼	@	.05½
Fancy Shirt Cuttings	.02¼	@	.02½